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20, HANOVER SQUARE, W.;
August, 1891.

228193

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1890 BUCKLAND, FRANCIS O., B.A., M.B., C.M., 6, Lower Sloane Street, S.W.

1886 BULL, WILLIAM C., M.B., 35, Clarges Street, Piccadilly, W.

1891 BURGHARD, FREDERIC FRANCOIS, M.D., M.S., 46, Weymouth Street, W.

1881 BURNET, ROBERT WILLIAM, M.D., 6, Upp. Wimpole Street, W. *Trans.* 1.

1879 BURTON, WILLIAM EDWARD, 24, Wimpole Street, W.

1887 BUTLER-SMYTHE, ALBERT CHARLES, 76, Brook Street, W. *Trans.* 1.

1881 BUTLIN, HENRY TRENTHAM, 82, Harley Street, W. (C. 1887–9.) *Trans.* 7.

1871 BUTT, WILLIAM F.

1884 BUXTON, DUDLEY WILMOT, M.D., B.S., 82, Mortimer Street, W.

O.M. BUZZARD, THOMAS, M.D., 74, Grosvenor Street, W. (S. 1870–2, C. 1873–6, V.P. 1880–1.) *Trans.* 14, *C.S.* 1.

ELECTED

1886 CAHILL, JOHN, 12, Seville Street, Lowndes Square, S.W.
1890 CALVERT, JAMES, M.D., 36, Queen Anne Street, W.
1891 CANNEY, H. E. LEIGH, M.B., 122, Brompton Road, S.W.
1891 CARLESS, ALBERT, M.S., M.B., 15, Stratford Place, W.
1890 CARR, JOHN WALTER, M.D., 40, Bloomsbury Square, W.C.
1889 CARTE, WILLIAM ALEXANDER, M.B., M.Ch., Victoria Barracks, Windsor.
1869 CARTER, ROBERT BRUDENELL, 27, Queen Anne Street, W. (C. 1873–6, V.P. 1879–81.) *Trans.* 8.
1885 CATON, RICHARD, M.D., 86, Rodney Street, Liverpool. *Trans.* 2.
1868 CAVAFY, JOHN, M.D., 2, Upper Berkeley Street, W. (C. 1881–3.) *Trans.* 4.
O.M. CAYLEY, WILLIAM, M.D., 27, Wimpole Street, W. (C. 1874–5, S. 1876–8, C. 1879–80, V.P. 1885–6.) *Trans.* 7, *C.S.* 1.
1890 CHAPMAN, CHARLES WILLIAM, M.D., 23, Fitzjohn's Avenue, Hampstead, N.W.
1884 CHAPMAN, PAUL M., M.D., 1, St. John Street, Hereford.
1885 CHEYNE, W. WATSON, M.B., C.M., 59, Welbeck Street, W.
1873 CHISHOLM, EDWIN, M.D., Abergeldie, Ashfield, near Sydney, New South Wales.
1868 CHOLMELEY, WILLIAM, M.D., 63, Grosvenor Street, W. (C. 1871–3.) *Trans.* 2.
O.M. CHURCH, WILLIAM SELBY, M.D., 130, Harley Street, W. (C. 1874–6.)
1873 CHURTON, THOMAS, M.D., 35, Park Square, Leeds. (C. 1889–91.) *Trans.* 2.
O.M. CLAPTON, EDWARD, M.D., 22, St. Thomas's Street, Southwark, S.E. (C. 1872–4.) *Trans.* 1.
O.M. CLARK, Sir ANDREW, Bart., M.D., LL.D., F.R.S., 16, Cavendish Square, W. (C. 1876–8, V.P. 1880–2, P. 1883–4.) *Trans.* 2.
1874 CLARK, ANDREW, 71, Harley Street, W. *Trans.* 1.
1887 CLARK, FRANCIS WILLIAM, Ridge House, Staithes, Yorkshire.
1885 †CLARKE, J. MICHELL, M.B., 2, York Buildings, Clifton, Bristol.
1885 CLARKE, WILLIAM BRUCE, M.B., 46, Harley Street, W. *C.S.* 1.
1877 †CLAY, ROBERT HOGARTH, M.D., 4, Windsor Villas, Plymouth.
1887 CLEMOW, ARTHUR HENRY WEISS, M.D., C.M., 2, Talgarth Road, West Kensington, W.
1877 *CLUTTON, HENRY HUGH, M.A., 2, Portland Place, W. (C. 1885–7.) *Trans.* 8, *C.S.* 2.
1882 COLLIER, HERBERT, M.D., The Grange, Gorleston, Great Yarmouth, Norfolk.
1878 COLLINS, W. MAUNSELL, M.D., M.C., 10, Cadogan Place, S.W.
1882 COLQUHOUN, DANIEL, M.D., Dunedin, New Zealand.
1872 COOKE, THOMAS, 40, Brunswick Square, W.C.
1868 COOPER, FRANK W., Leytonstone, Essex.
1887 COTES, CHARLES E. H., M.B., 42, Davies Street, Berkeley Square, W. *C.S.* 2.

ELECTED

1880 COTTLE, WYNDHAM, M.D., 3, Savile Row, W.

O.M. COUPER, JOHN, 80, Grosvenor Street, W. (C. 1874.)

1875 COUPLAND, SIDNEY, M.D. (C.), 16, Queen Anne Street, W. (S. 1882–4, C. 1885–7.) *Trans.* 5, *C.S.* 2.

1886 COUSINS, JOHN WARD, M.D., Riversdale, Kent Road, Southsea. *Trans.* 1.

1882 COXWELL, C. F., M.B. *Trans.* 2.

1879 CRIPPS, WILLIAM HARRISON, 2, Stratford Place, W. (C. 1886–8.) *Trans.* 3.

1872 CRITCHETT, ANDERSON, 21, Harley Street, W.

1877 CROCKER, HENRY RADCLIFFE, M.D., 121, Harley Street, W. (C. 1884–5.) *Trans.* 14.

O.M. CROFT, JOHN, 48, Brook Street, W. (C. 1870–2, V.P. 1882–4.) *Trans.* 12.

1890 CROWLE, THOMAS HENRY RICKARD, 3, Campden Hill Road, Kensington, W.

1872 DALBY, Sir WILLIAM BARTLETT, M.B., 18, Savile Row, W. (C. 1879–81.) *Trans.* 4.

1882 DALLAWAY, J. W. DENNIS, 5, Duchess Street, W.

1891 DARDENNE, HENRI, M.B., French Hospital, Shaftesbury Avenue, W.C.

1886 DAVIES, ARTHUR T., M.B., 23, Finsbury Square, E.C. *C.S.* 4.

1879 DAVIES-COLLEY, J. NEVILLE C., M.B., M.C., 36, Harley Street, W. (C. 1885–6.) *Trans.* 6.

1879 †DAVY, HENRY, M.D., 29, Southernhay, Exeter.

1868 DAY, WILLIAM HENRY, M.D., 10, Manchester Square, W. *Trans.* 5.

1889 DEAN, HENRY PERCY, 60, Gower Street, W.C.

1879 †DENNIS, FREDERIC S., M.D., 542, Madison Avenue, New York, U.S.

1875 DENT, CLINTON T., 61, Brook Street, W. (C. 1884–6.) *Trans.* 2.

O.M. DICKINSON, WILLIAM HOWSHIP, M.D., 9, Chesterfield Street, W. (C. 1874–5, V.P. 1888–9.) *Trans.* 2.

1891 DICKINSON, WILLIAM LEE, M.B., 9, Chesterfield Street, W.

1871 DIVER, EBENEZER, M.D., Kenley, Caterham Valley, Surrey. (C. 1890–1.)

O.M. DOWN, JOHN LANGDON H., M.D., 81, Harley Street, W. (C. 1870–2.) *Trans.* 1.

1868 DRAGE, CHARLES, M.D., Hatfield, Herts.

1879 DREWITT, F. G. DAWTREY, M.D., 42, Brook Street, W. (C. 1886–8.) *Trans.* 2.

O.M. DUCKWORTH, Sir DYCE, M.D., LL.D. (*President*), 11, Grafton Street, Bond Street, W. (C. 1875–7, V.P. 1887–8, P. 1891.) *Trans.* 16, *C.S.* 5.

O.M. DUFFIN, ALFRED B., M.D., 18, Devonshire Street, W. (C. 1872–4, V.P. 1891.) *Trans.* 6.

1884 DUKE, EDGAR, 30, Pevensey Road, St. Leonard's-on-Sea.

1869 DUKE, OLLIVER THOMAS, M.B., Surgeon, Bengal Army, India.

1889 DUNCAN, JOHN, M.D., St. Petersburg.

ELECTED

1889 DUNN, LOUIS ALBERT, M.S., 10, St. Thomas's Street, S.E.

O.M. DURHAM, ARTHUR EDWARD, 82, Brook Street, W. (C. 1867–9, V.P. 1884–5.) *Trans.* 5.

1884 EDMUNDS, WALTER, M.C., 75, Lambeth Palace Road, S.E.

1882 EMOND, EMILE, M.D., 113, Boulevard Beaumarchais, Paris.

O.M. ERICHSEN, JOHN E., LL.D., F.R.S., 6, Cavendish Place, W. (V.P. 1869–71.)

1868 EVANS, JULIAN, M.B., 123, Finborough Road, Redclyffe Square, S.W.

1888 *EVE, FREDERIC S., 125, Harley Street, Cavendish Square, W.

1877 EWART, WILLIAM, M.D., 33, Curzon Street, W. (C. 1884–6.) *C.S.* 1.

1868 †FAIRBANK, FREDERICK ROYSTON, M.D., 46, Hall Gate, Doncaster. *Trans.* 1.

1889 FARDON, EDWARD ASHBY, Middlesex Hospital.

1885 FENN, EDWARD LIVEING, M.D., 1, Portland Terrace, Richmond Green, Surrey.

1887 FENWICK, E. HURRY, 5, Old Burlington Street, W. *Trans.* 1, *C.S.* 1.

1872 FENWICK, J. C. J., M.D., 25, North Road, Durham.

1878 FIELD, GEORGE P., 34, Wimpole Street, W.

1876 FINLAY, DAVID WHITE, M.D. (*Hon. Secretary*), Aberdeen. (C. 1885–7, S. 1891.) *Trans.* 6.

1885 FITZ-PATRICK, THOMAS, M.D., 30, Sussex Gardens, Hyde Park, W.

1889 FLEMMING, PERCY, M.D., 35, Regent's Park Road, N.W. *C.S.* 1.

1878 *FONMARTIN, HENRY DE, M.D., 1, Anchor Gate Terrace, Portsea, Hants.

1889 FORBES, DANIEL MACKAY, Shoreditch Infirmary, 204, Hoxton Street, N.

1890 FORMAN, E. BAXTER, M.D., 11, Bramham Gardens, S. Kensington, S.W.

1890 FOSTER, MICHAEL G., M.B., M.A., Villa San Giovanni, Alassio, Italy.

1881 FOWLER, JAMES KINGSTON, M.D., 35, Clarges Street, W. (C. 1887–9.) *Trans.* 4, *C.S.* 5.

1886 FOX, R. HINGSTON, M.D., 23, Finsbury Square, E.C.

1878 FOX, THOMAS COLCOTT, M.B., 14, Harley Street, W. (C. 1888–90.) *Trans.* 5, *C.S.* 1.

1887 FREEMAN, HENRY WILLIAM, 24, Circus, Bath.

1890 FULLER, HENRY ROXBURGH, 45, Curzon Street, W.

1891 FYFFE, W. KINGTON, M.B., B.C., St. George's Hospital, S.W.

1888 GAGE-BROWN, CHARLES HERBERT, M.D., 74, Cadogan Place, S.W.

1868 GANT, FREDERICK JAMES, 16, Connaught Square, W. (C. 1877–9.) *Trans.* 3.

1887 GARROD, ARCHIBALD EDWARD, M.A., M.D., 9, Chandos Street, W.

1879 GARSTANG, THOMAS WALTER HARROPP, The Heath, Knutsford, Cheshire.

1885 GIBBONS, ROBERT ALEXANDER, M.D., 29, Cadogan Place, S.W. *Trans.* 1.

1868 GLOVER, JAMES GREY, M.D., 25, Highbury Place, N. (C. 1878–80.) *Trans.* 2.

ELECTED

1882 GODDARD, EUGENE, M.D., 106, Highbury New Park, N.

1875 GODLEE, RICKMAN JOHN, M.S., 19, Wimpole Street, W. (C. 1882–3, 1887–9, S. 1884–6.) *Trans.* 12, *C.S.* 4.

1882 GOLDIE, ROBERT WILLIAM, Medical Superintendent, Poplar and Stepney Sick Asylum, Devon's Road, Bromley.

1878 GOLDING-BIRD, C. H., M.B., 12, Queen Anne Street, W. (C. 1887–9.) *Trans.* 10.

1875 GOODHART, JAMES FREDERIC, M.D., 25, Weymouth Street, W. (C. 1880–2.) *Trans.* 12, *C.S.* 2.

1891 GOODMAN, ROGER NEVILLE, M.B., 3, Grove Crescent, Kingston-on-Thames.

1869 GOODRIDGE, HENRY FREDERICK AUGUSTUS, M.D., 10, Brock Street, Bath.

1882 GOODSALL, D. H., 17, Devonshire Place, W.

1877 GOULD, A. PEARCE, M.S., 10, Queen Anne Street, W. (C. 1885–7.) *Trans.* 11, *C.S.* 2.

1875 GOWERS, WILLIAM RICHARD, M.D., F.R.S., 50, Queen Anne Street, W. (C. 1881–2.) *Trans.* 5.

1891 GRANT, JAMES E. R., Charing Cross Chambers, Duke Street, W.C.

1891 GRANT, J. DUNDAS, M.D., 17, Finsbury Square, E.C.

1868 GREEN, T. HENRY, M.D., 74, Wimpole Street, W. (C. 1877–9.) *Trans.* 2, *C.S.* 1.

1875 †GREENFIELD, WILLIAM SMITH, M.D., 7, Heriot Row, Edinburgh. (C. 1881.) *Trans.* 3.

1883 GROSS, CHARLES, M.D., M.S., 112, Westbourne Grove, W.

1868 †GUENEAU DE MUSSY, HENRI, M.D., 15, Rue du Cirque, Paris.

1887 HABERSHON, SAMUEL HERBERT, M.D., 70, Brook Street, W.

1882 HADDEN, WALTER BAUGH, M.D., 21, Welbeck Street, W. (C. 1886–8.) *Trans.* 8, *C.S.* 1.

1875 HALE, C. D. B., 8, Sussex Gardens, W.

1878 HALL, F. DE HAVILLAND, M.D., 47, Wimpole Street, W. (C. 1885–87.) *Trans.* 7, *C.S.* 3.

1885 HALLIBURTON, WILLIAM DOBINSON, M.D., F.R.S., 25, Maitland Park Villas, Haverstock Hill, N.W.

1889 HALSTEAD, GEORGE EZRA, M.D., B.S., Ramsgate.

1888 HANDFIELD-JONES, MONTAGU, M.D., 35, Cavendish Square, W.

1886 †HANDFORD, HENRY, M.D., 14, Regent Street, Nottingham. *Trans.* 3, *C.S.* 1.

1886 HARDIE, JAMES, M.D., 15, St. John Street, Manchester.

O.M. HARLEY, JOHN, M.D., F.L.S., 9, Stratford Place, W. (C. 1875.) *Trans.* 1.

1890 HARPER, JAMES, M.D., 7, Drayton Terrace, South Kensington, S.W.

1872 HARRIS, HENRY, M.D., Trengweath, Redruth, Cornwall.

1889 HARRIS, HERBERT ELWIN, M.B., St. George-in-the-East Infirmary, E. *Trans.* 1.

ELECTED

1881 HARRISON, CHARLES EDWARD, M.B., Grenadier Guards Hospital, Rochester Row, S.W.

1869 HAWARD, J. WARRINGTON, 16, Savile Row, W. (C. 1876–8, 1884–6, S. 1881–3, V.P. 1888.) *Trans.* 12.

1886 HAWKINS, FRANCIS HENRY, M.B., 59, Wimpole Street, W. *C.S.* 2.

1889 HAWKINS, HERBERT PENNELL, M.B., B.S., St. Thomas's Hospital, S.E. *Trans.* 1.

1890 HAWKINS-AMBLER, GEORGE ARTHUR, 30, Royal Park, Clifton, Bristol.

O.M. HEATH, CHRISTOPHER 36, Cavendish Square, W. (C. 1867–71, V.P. 1876–8, T. 1879–88, P. 1889–90.) *Trans.* 18.

1879 HENDERSON, GEORGE COURTENAY, M.D., Kingston, Jamaica, West Indies.

1882 HERON, GEORGE ALLAN, M.D., 57, Harley Street, W.

1884 HERRINGHAM, WILMOT PARKER, M.D., 13, Upper Wimpole Street, W. *Trans.* 1, *C.S.* 1.

1888 †HETHERINGTON, GEORGE HAYNES, 10, Museum Street, Ipswich.

O.M. HEWITT, GRAILY, M.D., 36, Berkeley Square, W. (C. 1878–9.) *Trans.* 1.

1868 HILL, BERKELEY, M.B., 66, Wimpole Street, W. (C. 1870–1, V.P. 1891.) *Trans.* 7, *C.S.* 1.

1874 HOLDERNESS, WILLIAM BROWN, 15, Park Street, Windsor.

1868 †HOLMAN, CONSTANTINE, M.D., Reigate, Surrey.

O.M. HOLMES, TIMOTHY, 18, Great Cumberland Place, W. (C. 1867–9, V.P. 1873–5.) *Trans.* 16.

O.M. HOLT, BARNARD WIGHT, 14, Savile Row, W. *Trans.* 1.

O.M. HOLTHOUSE, CARSTEN. (C. 1870–2.) *Trans.* 8.

1878 HOOD, DONALD WILLIAM CHARLES, M.D., 43, Green Street, W. (C. 1891.) *Trans.* 1.

1873 HOPE, WILLIAM, M.D., 56, Curzon Street, W.

1883 HOPKINS, JOHN, Central London Sick Asylum, Cleveland Street, W. *C.S.* 1.

1884 HORSLEY, VICTOR, M.B., F.R.S., 33, Seymour Street, W. *Trans.* 2, *C.S.* 1.

1880 *HOVELL, T. MARK, 3, Mansfield Street, W.

1876 HOWSE, HENRY GREENWAY, M.S., 59, Brook Street, W. (C. 1881–3, V.P. 1890–1.) *Trans.* 3.

O.M. HULKE, JOHN WHITAKER, F.R.S., 10, Old Burlington Street, W. (C. 1867–9, V.P. 1878–80.) *Trans.* 13.

O.M. HUMPHRY, SIR GEORGE MURRAY, M.D., F.R.S., Cambridge. (V.P. 1867–70.)

O.M. HUTCHINSON, JONATHAN, F.R.S., 15, Cavendish Square, W. (C. 1867–8, V.P. 1875–6.) *Trans.* 14, *C.S.* 1.

1879 INKSON, JAMES, M.D., Brigade Surgeon, Army.

1883 JACKSON, GEORGE HENRY, 6, Cliff Bridge Terrace, Scarborough.

ELECTED

O.M. JACKSON, J. HUGHLINGS, M.D., F.R.S., 3, Manchester Square, W. (C. 1872–3, V.P. 1887.) *Trans.* 2.

1877 JACOBSON, WALTER HAMILTON ACLAND, M.B., M.S., 66, Great Cumberland Place, W. (C. 1890–1.) *Trans.* 2.

1888 JAMISON, ARTHUR, M.D., C.M., 18, Lowndes Street, S.W.

1888 JAMES, J. T., M.B., 30, Harley Street, W.

1875 JESSETT, FREDERICK BOWREMAN, 16, Upper Wimpole Street, W.

O.M. JOHNSON, GEORGE, M.D., F.R.S., 11, Savile Row; W. (V.P. 1874–6.) *Trans.* 5.

1889 JOHNSON, RAYMOND, M.B., B.S., 123, Gower Street, W.C.

1878 JOHNSTON, WILLIAM, M.D., M.C., 16, Lonsdale Terrace, Upper Kent Street, Leicester.

O.M. JONES, SYDNEY, M.B., 16, George Street, Hanover Square, W. (C. 1867–8, V.P. 1886–7.) *Trans.* 2.

1872 JONES, THOMAS RIDGE, M.D., 4, Chesham Place, S.W.

1876 JORDAN, FURNEAUX, Selly Hill, Birmingham. *Trans.* 1.

1886 JULER, HENRY EDWARD, 77, Wimpole Street, W.

1878 KEETLEY, CHARLES ROBERT BELL, 56, Grosvenor Street, W. *Trans.* 2.

O.M. KELLY, CHARLES, M.D., Worthing, Sussex.

1882 KESTEVEN, WILLIAM HENRY, 372, Camden Road, N. *Trans.* 1.

1883 KIDD, PERCY, M.D., 60, Brook Street, W. (C. 1891.) *Trans.* 3, *C.S.* 1.

1887 †KNAGGS, R. LAWFORD, B.C., Huddersfield. *Trans.* 1.

1878 LACEY, THOMAS WARNER, 196, Burrage Road, Plumstead.

1890 LANCASTER, ERNEST LE CRONIER, M.B., B.Ch., St. George's Hospital, S.W.

1883 LANE, WILLIAM ARBUTHNOT, M.B., M.S., 8, St. Thomas's Street, S.E. *Trans.* 6, *C.S.* 4.

O.M. LANGTON, JOHN, 62, Harley Street, W. (C. 1878–80.) *Trans.* 2.

1886 LANKESTER, HERBERT, M.D., 1, Elm Park Gardens, South Kensington, S.W.

1885 LARDER, HERBERT, Whitechapel Infirmary, Baker's Row, E. *C.S.* 1.

O.M. LAWSON, GEORGE, 12, Harley Street, W. (S. 1871–3, C. 1874–6, V.P. 1881–3.) *Trans.* 16.

1877 †LEDIARD, HENRY AMBROSE, M.D., 41, Lowther Street, Carlisle. (C. 1889.) *Trans.* 5.

O.M. LEE, HENRY, 9, Savile Row, W. (V.P. 1870–2.) *Trans.* 7.

1877 LEES, DAVID B., M.D., 22, Weymouth Street, W. (C. 1885.) *Trans.* 8.

1879 LICHTENBERG, GEORGE, M.D., 47, Finsbury Square, E.C.

1890 LITTLE, JOHN FLETCHER, M.B., 60, Welbeck Street, W.

1868 LITTLE, LOUIS STROMEYER, China.

1875 LIVEING, EDWARD, M.D., 52, Queen Anne Street, W.

1872 LIVEING, ROBERT, M.D., 11, Manchester Square, W. (C. 1883–4.) *Trans.* 2.

1885 LOCKWOOD, CHARLES BARRETT, 19, Upper Berkeley Street, W. *Trans.* 1.

ELECTED

1876 LONGHURST, ARTHUR EDWIN TEMPLE, M.D., 4, Eaton Square, S.W. (C. 1889–91.) *Trans.* 1.

1881 LUBBOCK, MONTAGU, M.D., 19, Grosvenor Street, W.

1876 LUCAS, R. CLEMENT, M.B., B.S., 18, Finsbury Square, E.C. (C. 1883–5.) *Trans.* 9.

1879 LUNN, JOHN REUBEN, New Marylebone Infirmary, Rackham Street; Ladbroke Grove Road, W. (C. 1890–1.) *Trans.* 5, *C.S.* 7.

1889 MACBRIDE, P., M.D., 16, Chester Street, Edinburgh.

1871 MAC CORMAC, Sir WILLIAM, 13, Harley Street, W. (C. 1877–9, V.P. 1888–9.) *Trans.* 5.

1891 MACDONALD, GRENVILLE, M.D., 85, Harley Street, W.

1883 †MACFARLANE, ALEXANDER WILLIAM, M.D., 6, Manchester Square.

1881 MCHARDY, MALCOLM MACDONALD, 5, Savile Row, W. *Trans.* 1.

1882 MACKENZIE, FREDERIC MORELL, 29, Hans Place, S.W.

O.M. MACKENZIE, Sir MORELL, M.D., 19, Harley Street, W. *Trans.* 4.

1879 MACKENZIE, STEPHEN, M.D., 18, Cavendish Square, W. (C. 1884, 1888–90, S. 1885–7.) *Trans.* 9, *C.S.* 10.

1884 MACKERN, JOHN, M.B., St. German's Lodge, Shooter's Hill Road, Blackheath.

1879 MACLAGAN, THOMAS JOHN, M.D., 9, Cadogan Place, S.W. (C. 1889–91.) *Trans.* 1.

1885 MACLAREN, RODERICK, M.D., Portland Square, Carlisle. *Trans.* 1.

1875 MACNAMARA, CHARLES, 13, Grosvenor Street, W. (C. 1879–81.) *C.S.* 2.

1879 MAGILL, JAMES, M.D., M.C., Coldstream Guards Hospital, Vincent Square, Westminster, S.W.

1885 MAGUIRE, ROBERT, M.D., 4, Seymour Street, W. *Trans.* 1.

1881 MAKINS, GEORGE HENRY, 2, Queen Street, W. *Trans.* 1, *C.S.* 5.

1887 MALCOLM, JOHN D., M.B., C.M., 24, Bryanston Street, W.

1890 MANSON, PATRICK, M.D., C.M., 21, Queen Anne Street, W.

1888 †MARRIOTT, HYDE, M.B., Dial House, Stockport.

1868 MARSH, F. HOWARD, 30, Bruton Street, W. (C. 1876–7, 1881–3, S. 1878–80, V.P. 1887–8.) *Trans.* 10, *C.S.* 3.

1875 MARSHALL, F. J., St. George's Hospital, S.W.

1887 MARTIN, SIDNEY, M.D., B.S., 10, Mansfield Street, W.

1888 MASON, DAVID JAMES, M.D., C.M., Maidenhead.

1884 MAUDSLEY, HENRY CARR, M.D., 11, Spring Street, Melbourne, Victoria.

1868 †MAY, EDWARD HOOPER, M.D., High Cross, Tottenham, Middlesex.

1888 MAY, WILLIAM PAGE, M.D., B.Sc., National Hospital, Queen Square, W.C.

1888 MENZIES, J. HERBERT, 47, Earl's Court Road, S.W.

1878 MEREDITH, WILLIAM APPLETON, C.M. (C.), 6, Queen Anne Street, W. (C. 1887–9.) *Trans.* 2.

1873 MICKLE, WILLIAM JULIUS, M.D., Grove Hall Asylum, Bow, E.

1890 MILEY, MILES, M.A., M.B., 21, Belsize Avenue, Hampstead, N.W.

ELECTED

1877 MILNER, EDWARD, 32, New Cavendish Street, W.

1882 MONEY, ANGEL, M.D., 24, Harley Street, W. (C. 1888–90.) *Trans.* 8.

1874 MORGAN, JOHN HAMMOND, 68, Grosvenor Street, W. (C. 1883–5.) *Trans.* 2, *C.S.* 5.

1877 MORRIS, HENRY, M.B., 8, Cavendish Square, W. (C. 1884–6.) *Trans.* 9.

1877 MORRIS, MALCOLM ALEX., 8, Harley Street, W. (C. 1890–1.) *Trans.* 1.

1888 MORISON, ALEXANDER, M.D., Dunnottar, 115, Green Lanes, Highbury New Park, N. *Trans.* 1.

1885 MOTT, FREDERICK WALKER, M.D., C.M., 84, Wimpole Street, W.

1879 MOULLIN, CHARLES W. MANSELL, 69, Wimpole Street, W. (C. 1888–90.) *Trans.* 3.

1875 MURPHY, SHIRLEY F., 41, Queen Anne Street, W. (C. 1888–90.) *C.S.* 1.

1885 MURRAY, ALEXANDER DALTON, M.B., Ricksmansworth, Herts.

1883 MURRAY, HUBERT MONTAGUE, M.D., 27, Savile Row, W. *Trans.* 1.

1868 MYERS, ARTHUR BOWEN RICHARDS, 43, Gloucester Street, Warwick Square, S.W. (C. 1877–9.) *Trans.* 1.

1882 MYERS, A. T., M.D., 9, Lower Berkeley Street, W. *Trans.* 1, *C.S.* 1.

1872 MYRTLE, ANDREW S., M.D., 8, Park Parade, Harrogate.

1875 NETTLESHIP, EDWARD, 5, Wimpole Street, W. (C. 1881–2.) *Trans.* 2.

1889 †NEWMAN, D., M.D., 18, Woodside Place, Glasgow. *Trans.* 1.

O.M. NORTON, ARTHUR TREHERN, 101, Harley Street, W. (C. 1874–6.) *Trans.* 7.

O.M. NUNN, THOMAS WILLIAM, 8, Stratford Place, W. (C. 1873–4.) *Trans.* 7.

1880 O'CONNOR, BERNARD, M.D., Greenhill Park, Harlesden, N.W. *Trans.* 1.

O.M. OGLE, JOHN WILLIAM, M.D., 30, Cavendish Square, W. (C. 1867–8, V.P. 1884–5.) *Trans.* 6.

1868 †OGLE, WILLIAM, M.D., 98, Friar Gate, Derby.

1883 OLIVER, GEORGE, M.D., West End Park, Harrogate. *Trans.* 1.

1887 †OLIVER, THOMAS, M.D., 12, Eldon Square, Newcastle-on-Tyne.

1887 OPENSHAW, THOMAS HORROCKS, M.B., 16, Wimpole Street, W.

1868 OPPERT, FRANZ, M.D., 128, Leipzigerstrasse, Germany. *Trans.* 1.

1877 ORD, WILLIAM MILLER, M.D. (*Treasurer*), 37, Upper Brook Street, W. (C. 1882–4, T. 1889–91.) *Trans.* 7.

1890 ORD, W. WALLIS, M.B., B.Ch., 32, Harley Street, W.

1887 ORMEROD, JOSEPH ARDERNE, M.D., 25, Upper Wimpole Street, W.

1884 ORMSBY, LAMBERT HEPENSTAL, M.D., 4, Merrion Square West, Dublin.

1883 ORTON, GEORGE HUNT, M.B., 1A, Campden Hill Road, Kensington, W.

1877 OWEN, ISAMBARD, M.D., 40, Curzon Street, W. (C. 1888–90.) *Trans.* 1.

1888 OXLEY, ALFRED RICE, M.D., Streatham Common.

1888 PAGE, FREDERICK, M.D., 1, Saville Place, Newcastle-on-Tyne.

ELECTED

1875 PAGE, HERBERT W., M.C., M.B., 146, Harley Street, W. (C. 1882–4.) *Trans.* 3.

1884 PAGET, STEPHEN, 57, Wimpole Street, W. *Trans.* 3, *C.S.* 1.

1873 PARKER, ROBERT WILLIAM, 8, Old Cavendish Street, W. (C. 1882–4, 1890–1, S. 1887–9.) *Trans.* 11, *C.S.* 7.

1881 PARKER, RUSHTON, M.B., B.S., 59, Rodney Street, Liverpool. *Trans.* 1, *C.S.* 1.

1890 PARKIN, ALFRED, M.S., 149, Beverley Road, Hull.

1888 PARSONS, JOHN INGLIS, M.D., 3, Queen Street, May Fair, W.

1881 PASTEUR, WILLIAM, M.D., 4, Chandos Street, W. (C. 1891.) *Trans.* 1, *C.S.* 2.

1883 PAUL, JOHN LISTON, M.D., 43, Queensborough Terrace, W.

O.M. PAVY, FREDERICK WILLIAM, M.D., F.R.S., 35, Grosvenor Street, W. (C. 1869–71, V.P. 1882–4.) *Trans.* 3.

1886 PAYNE, JOSEPH FRANK, M.D., 78, Wimpole Street, W. *Trans.* 1.

1879 PEEL, ROBERT, 130, Collins Street East, Melbourne, Victoria.

1886 †PENNY, WILLIAM JOHN, 42, Caledonia Place, Clifton.

1887 PENROSE, FRANCIS GEORGE, M.D., 4, Harley Street, W.

1882 PEPPER, AUGUSTUS JOSEPH, M.S., M.B., 13, Wimpole Street, W. *Trans.* 1.

1874 PHILLIPS, CHARLES DOUGLAS F., M.D., 10, Henrietta Street, W.

1884 PHILLIPS, SIDNEY PHILIP, M.D., 62, Upper Berkeley Street, W. *Trans.* 4.

O.M. PICK, THOMAS PICKERING, 18, Portman Street, W. (S. 1874–7, C. 1878–80, V.P. 1885–6.) *Trans.* 4.

1885 PITT, GEORGE NEWTON, M.D., 24, St. Thomas's Street, S.E.

1883 PITTS, BERNARD, M.A., M.C., 31, Harley Street, W. *Trans.* 4.

1871 †PLAYNE, ALFRED, M.B., Maidenhead.

1884 POLAND, JOHN, 4, St. Thomas's Street, S.E.

1884 POLLARD, BILTON, 24, Harley Street, W. *Trans.* 2.

1868 POLLOCK, JAMES EDWARD, M.D., 52, Upper Brook Street, W. (C. 1878–80.)

1871 POORE, GEORGE VIVIAN, M.D., 30, Wimpole Street, W. (C. 1879–81.) *Trans.* 3.

1873 PORT, HEINRICH, M.D., 48, Finsbury Square, E.C.

1881 POWELL, H. A., M.A., 1, The Avenue, Beckenham, Kent.

O.M. POWELL, R. DOUGLAS, M.D., 62, Wimpole Street, W. (C. 1874–6, V.P. 1889–90.) *Trans.* 4.

1868 PRENTIS, CHARLES, Surgeon-Major, Bengal Medical Service; India.

1884 PRINGLE, JOHN, JAMES, M.B., 35, Bruton Street, W. *Trans.* 1, *C.S.* 1.

1884 PYE-SMITH, PHILIP HENRY, M.D., F.R.S., 54, Harley Street, W. (C. 1890–1.)

O.M. QUAIN, Sir RICHARD, Bart., M.D., LL.D., F.R.S., 67, Harley Street, W. (C. 1867–9.)

O.M. RAMSKILL, J. SPENCE, M.D., 5, St. Helen's Place, E.C.

ELECTED

1889 RANKING, JOHN E., M.D., Hanover House, Tunbridge Wells.
1873 RANSFORD, GIFFORD, M.D., 22, Sussex Square, W. (C. 1884–5.)
1868 RASCH, ADOLPHUS A., M.D., 7, South Street, E.C.
1883 READ, THOMAS LAURENCE, 11, Petersham Terrace, Queen's Gate, S.W.
1868 REEVES, HENRY A., 7, Grosvenor Street, W. *Trans.* 2.
1891 REMFRY, LEONARD, M.D., 4, Harley Street, W. *Trans.* 1.
O.M. REYNOLDS, JOHN RUSSELL, M.D., F.R.S., 38, Grosvenor Street, W. (C. 1867–8.)
1868 RICE, MICHAEL W., M.D. (C. 1876–8.)
O.M. RINGER, SYDNEY, M.D., F.R.S., 15, Cavendish Place, W. (C. 1871–2.)
1877 RIVINGTON, WALTER, M.S., 95, Wimpole Street, W. (C. 1886–8.) *Trans.* 3.
1873 †ROBERTS, DAVID LLOYD, M.D., 11, St. John Street, Manchester.
1888 ROBERTS, FRANK ERNEST, Tulse Dale Villa, Lower Norwood, S.E.
1883 ROBERTS, FREDERICK THOMAS, M.D., 102, Harley Street, W.
1890 ROBERTSON, ROBERT, M.D., Belgrave Road, Ventnor, Isle of Wight.
1885 ROBINSON, ARTHUR HENRY, M.D., Mile End Infirmary, Bancroft Road, N.E. *C.S.* 3.
1890 ROBINSON, GEORGE SOMERVILLE, Surgeon-Major, Army.
1885 ROBSON, A. W. MAYO, Hilary Place, Leeds. *Trans.* 8.
1889 ROLLESTON, HUMPHRY DAVY, M.B., B.C., 13, Upper Wimpole Street, W.
1888 ROPER, ARTHUR, Lewisham Hill, Blackheath.
1889 ROSS, Daniel McClure, 54, Upper Berkeley Street, W.
1877 ROTH, BERNARD, 29, Queen Anne Street, W. *Trans.* 1, *C.S.* 4.
1890 ROUGHTON, EDMUND WILKINSON, 33, Westbourne Terrace, W.
O.M. ROUSE, JAMES, 2, Wilton Street, S.W. (C. 1875–7.) *Trans.* 2.
1874 ROWLAND, EDWARD ROGER, Dordrecht, Wodehouse, S. Africa.
1887 RUTHERFOORD, H. T., M.B., 46, Queen Anne Street, W.
1885 RYLE, REGINALD JOHN, M.D., Green View, Hadley Green, Barnet.
1882 SAINSBURY, HARRINGTON, M.D., 63, Welbeck Street, W.
O.M. SANDERSON, JOHN BURDON, M.D., LL.D., F.R.S., 50, Banbury Road, Oxford. (S. 1867–9, C. 1870, V.P. 1871–3.) *Trans.* 3.
1873 SAVAGE, GEORGE HENRY, M.D., 3, Henrietta Street, W. (C. 1882–3.)
1886 SAVILL, THOMAS DIXON, M.D., Paddington Infirmary, 285, Harrow Road, W. *Trans.* 1, *C.S.* 2.
1886 SCOTT, ALFRED, 15, German Place, Brighton.
1877 SEATON, EDWARD, M.D., 35, George Street, Hanover Square, W. *Trans.* 1.
1869 SEDGWICK, LEONARD WILLIAM, M.D., 2, Gloucester Terrace, Hyde Park, W. (C. 1879–81.)
1878 SEMON, FELIX, M.D., 39, Wimpole Street, W. (C. 1885–7.) *Trans.* 7.
1884 SHARKEY, SEYMOUR, J., M.D., 2, Portland Place, W.
1889 SHAW, LAURISTON ELGIN, M.D., 10, St. Thomas's Street, S.E.
1890 SHEPPARD, CHARLES EDWARD, M.D. (*deceased*).
1875 SHERWOOD, ARTHUR PAUL, 8, Seaside Road, Eastbourne.

ELECTED

O.M. SIBLEY, SEPTIMUS WILLIAM, 7, Harley Street, W. (C. 1871–4, V.P. 1890–1.)

1886 SILCOCK, ARTHUR QUARRY, M.D., M.S., 52, Harley Street, W. *Trans.* 1. *C.S.* 2.

1879 SKERRITT, EDWARD MARKHAM, M.D., Coburg Villa, Richmond Hill, Clifton, Bristol. *Trans.* 2.

1872 SLIGHT, GEORGE, M.D., 14, Old Burlington Street, W.

1882 SMITH, E. NOBLE, 24, Queen Anne Street, W. *Trans.* 1.

1888 SMITH, FREDERICK J., M.B., 4, Christopher Street, Finsbury Square, E.C.

1884 SMITH, R. PERCY, M.D., Bethlem Royal Hospital, St. George's Road, S.E.

O.M. SMITH, THOMAS, 5, Stratford Place, W. (C. 1869–71, V.P. 1880–2.) *Trans.* 14.

1875 SMITH, T. GILBART, M.A., M.D., 68, Harley Street, W. (C. 1883–5.)

1872 SMITH, WILLIAM WILBERFORCE, M.D., 14, Stratford Place, W.

1868 SNOW, WILLIAM V., M.D., Richmond Gardens, Bournemouth.

1890 SOLLY, ERNEST, M.B., Royal Free Hospital, Gray's Inn Road, W.C.

O.M. SOUTHEY, REGINALD, M.D., 32, Grosvenor Road, Pimlico, W. (C. 1867–70, 1876–8, S. 1873–5, V.P. 1883–4.) *Trans.* 16.

1888 SPENCER, WALTER GEORGE, M.S., M.B., 35, Brook Street, W. *C.S.* 3.

1885 SPICER, FREDERICK, M.D., 282, Camden Road, N.W.

1888 SPICER, ROBERT HENRY SOANES, M.D., 28, Welbeck Street, W.

1882 SPOONER, FREDERICK HENRY, M.D., 4, Maitland Place, Lower Clapton, N.E.

1876 SQUIRE, A. BALMANNO, M.B., 24, Weymouth Street, W. *Trans.* 5, *C.S.* 3.

1879 STAPLES, FRANCIS PATRICK, Brigade-Surgeon, Grove House, Dartmouth Road, Blackheath.

1889 STEWART, EDWARD, M.D., 8, Upper Wimpole Street, W.

1871 STEWART, WILLIAM EDWARD, 16, Harley Street, W.

1874 †STIRLING, EDWARD C., M.D. [care of Messrs. ELDER & Co., 7, St. Helen's Place, E.C.], Adelaide, South Australia.

1888 STOKER, GEORGE, 14, Hertford Street, W.

1881 STOKES, HENRY FRASER, 2, Highbury Crescent, N.

1878 STOKES, Sir WILLIAM, M.D., 5, Merrion Square North, Dublin. *Trans.* 2.

1884 STONHAM, CHARLES, 4, Harley Street, W. *C.S.* 3.

1878 STRUGNELL, FREDERICK WILLIAM, 45, Highgate Road, Highgate, N.W. *C.S.* 1.

1878 †STURGE, WILLIAM ALLEN, M.D., 29, Boulevard Dubouchage, Nice, France. *Trans.* 4.

1872 *SUTHERLAND, HENRY, M.D., 6, Richmond Terrace, Whitehall, S.W. *Trans.* 1.

1887 SUTTON, JOHN BLAND, 46, Queen Anne Street, W. *Trans.* 6.

Elected

1882 Symonds, Charters James, M.S. (C.), 26, Weymouth Street, W. (C. 1888–9.) *Trans.* 11, *C.S.* 4.

1876 Symonds, Horatio Percy, 35, Beaumont Street, Oxford.

1885 Tait, Edward Sabine, M.B., 48, Highbury Park, N.

1885 Tait, Henry Brewer, Lincluden, Sunnyside Road, Hornsey Lane, N.

1891 Tate, Walter William Hunt, University College Hospital, W.C.

1868 Tatham, John, M.D., 12, George Street, Hanover Square, W.

1886 Tay, Warren, 4, Finsbury Square, E.C.

1878 Taylor, Francis Thomas, M.B., 224, Lewisham High Road, S.E.

1875 Taylor, Frederick, M.D., 20, Wimpole Street, W. (S. 1879–81, C. 1882–4.) *Trans.* 9, *C.S.* 1.

1889 Taylor, Henry Herbert, 10, Brunswick Place, Brighton.

1890 Taylor, James, M.B., National Hospital, Queen Square, W.C.

1882 Taylor, Seymour, M.D., 16, Seymour Street, W. *Trans.* 1, *C.S.* 1.

1885 †Taylor, W. C. Everley, 34, Queen Street, Scarborough.

1886 Teale, Thomas Pridgin, M.B., F.R.S., 38, Cookridge Street, Leeds.

1890 Thane, Edgar Herbert, M.B., Sydney, New South Wales.

1882 Thin, George, M.D., 22, Queen Anne Street, W. *Trans.* 1.

1886 Thompson, Charles Herbert, M.D., 21, Half Moon Street, W.

O.M. Thompson, Edmund Symes, M.D., 33, Cavendish Square, W. (C. 1880–2.) *Trans.* 1.

O.M. Thompson, Sir Henry, 35, Wimpole Street, W. (C. 1867–8, V.P. 1886–7.) *Trans.* 3.

1887 Thornton, John Knowsley, M.B., C.M., 22, Portman Street, W. (C. 1890–1.)

1872 Thornton, William Pugin, 35, St. George's Road, Canterbury. *Trans.* 5.

1885 Thursfield, Thomas William, M.D., Selwood, Beauchamp Square, Leamington.

1887 Totsuka, Kankai.

1874 Travers, William, M.D., 2, Phillimore Gardens, Kensington, W.

1884 Treves, Frederick, 6, Wimpole Street, W. *Trans.* 5.

1882 Turner, Francis Charlewood, M.D., 15, Finsbury Square, E.C. (C. 1887–9.) *Trans.* 1.

1882 Turner, George Robertson, 49, Green Street, W. *Trans.* 6.

1888 Turner, Philip Dymock, M.D., 8, Gloucester Terrace, Onslow Gardens, S.W.

1877 Tweedy, John, 100, Harley Street, W.

1878 Tyson, William Joseph, M.D., 10, Langhorne Gardens, Folkestone. (C. 1886–8.) *Trans.* 5.

1881 Uhthoff, John Caldwell, M.D., 46, Western Road, Hove, Brighton.

1868 Venning, Edgcombe, 30, Cadogan Place, S.W. (C. 1876–8.) *Trans.* 2.

1890 Voelcker, Arthur Francis, M.D., B.S., 13, Welbeck Street, W. *Trans.* 1.

1886 Wade, Charles H., Scotleigh, Chudleigh, Devon.

ELECTED

1868 WAGSTAFFE, WILLIAM WARWICK, Purleigh, St. John's Hill, Sevenoaks. (C. 1878.)

1886 *WAINEWRIGHT, BENJAMIN, M.B., C.M., 67, Grosvenor Street, W. *Trans.* 2, *C.S.* 1.

1885 WAKLEY, THOMAS, jun., 5, Queen's Gate, W.

1885 WALKER, CHARLES ROTHERHAM, M.D., 7, Grove Road, Leytonstone, E.

1890 WALLIS, FREDERICK CHARLES, M.B., B.S., 18, St. James's Street, S.W.

1875 WALSHAM, WILLIAM J., 27, Weymouth Street, W. (C. 1882–4.) *Trans.* 5, *C.S.* 1.

1888 WALTERS, FREDERICK RUFENACHT, M.D., 20, Finsbury Circus, E.C.

1888 †WARNER, PERCY, Woodford, Essex.

1891 WATERHOUSE, HERBERT FURNIVALL, M.D., 34, Bernard Street, W.C.

1868 WATKINS, EDWIN T., M.D., 61, Guildford Street, W.C. (C. 1881–3.)

1879 DE WATTEVILLE, ARMAND, M.A., M.D., B.Sc., 30, Welbeck Street, W.

O.M. WEBER, HERMANN, M.D., 10, Grosvenor Street, W. (C. 1867–71, V.P. 1873–5.) *Trans.* 9.

1876 WEIR, ARCHIBALD, M.D., St. Mungho's, Great Malvern.

1868 WELLS, Sir THOMAS SPENCER, Bart., 3, Upper Grosvenor Street, W. (C. 1873.)

1882 WEST, SAMUEL, M.D., 15, Wimpole Street, W. (C. 1887–9.) *Trans.* 10, *C.S.* 1.

1874 WHEELHOUSE, CLAUDIUS GALEN, Hilary Place, Leeds. *Trans.* 1.

1868 WHIPHAM, THOMAS TILLYER, M.B., 11, Grosvenor Street, W. (C. 1878–80.) *Trans.* 13.

1874 WHISTLER, W. MCNEIL, M.D., 17, Wimpole Street, W.

1882 WHITE, EDWIN FRANCIS, 7, Dealtry Road, Putney.

1890 WHITE, GILBERT B. MOWER, M.B., B.S., 39, Torrington Square, W.C.

1883 WHITE, WILLIAM HALE, M.D., 65, Harley Street, W. (C. 1887–9.) *Trans.* 7, *S.C.* 2.

1883 WHITE, WILLIAM HENRY, M.D., 43, Weymouth Street, W. *C.S.* 1.

1882 WHITTLE, EDWARD GEORGE, M.D., 65, Dyke Road, Brighton.

1871 WIGHT, GEORGE, M.B., C.M.; 428, Liverpool Road, N.

1879 WILCOX, HENRY, M.B., Dorchester House, Herbert Road, Woolwich.

O.M. WILKS, SAMUEL, M.D., F.R.S., 72, Grosvenor Street, W. (C. 1871–2, V.P. 1886–7.) *Trans.* 1.

1884 WILLCOCKS, FREDERICK, M.D., 14, Mandeville Place, W. *C.S.* 1.

O.M. WILLETT, ALFRED, 36, Wimpole Street, W. (C. 1872–5, V.P. 1889–91.) *C.S.* 1.

1890 WILLETT, EDGAR, M.B., 60, Welbeck Street, W.

1888 WILLIAMS, CAMPBELL, 62, Welbeck Street, W.

O.M. WILLIAMS, CHARLES THEODORE, M.D., 2, Upper Brook Street, W. (C. 1877–9, V.P. 1889–90.) *Trans.* 8.

1888 WILLIAMS, DAWSON, M.D., 25, Old Burlington Street, W.

1881 WILLIAMS, JOHN, M.D., 63, Brook Street, W. (C. 1885–6.)

ELECTED

1870 WILLIAMS, WILLIAM RHYS, M.D., Linden House, Bertle Road, Leamington.
1890 WILLIAMS, W. ROGER, 34, Welbeck Street, W.
1876 WILLIAMSON, JAMES MANN, M.D., Ventnor, Isle of Wight.
O.M. WILLIS, FRANCIS, M.D., The Spa, Braceborough, Stamford.
1889 WILLS, WILLIAM ALFRED, M.D., 52, Davies Street, W.
1886 WILSON, ALBERT, M.D., Leytonstone, Essex.
1888 †WILSON, CLAUDE, M.D., C.M., Belmont, Tunbridge Wells.
1890 WOOD, NEVILLE, 13, St. George's Terrace, Gloucester Road, S.W.
1883 WOODCOCK, JOHN ROSTRON, 263, Hagley Road, Birmingham.
1879 WOODWARD, GEORGE P. M., M.D., Deputy Surgeon-General; Sydney, New South Wales.
1884 WORTS, EDWIN, 6, Trinity Street, Colchester.
1888 WYMAN, WILLIAM S., M.D., Red Brae, 18, Putney Hill, S.W.
1872 YEO, I. BURNEY, M.D., 44, Hertford Street, W. (C. 1881–3.) *Trans.* 7.

[*It is requested that any change of Title or Residence be communicated to the Secretaries before the* 1st *of July in each year, in order that the list may be made as correct as possible.*]

LIST OF MEMBERS.

ORIGINAL MEMBERS (ALPHABETICALLY).

Sir Henry Acland, M.D., F.R.S.
James Andrew, M.D.
Henry Arnott.
W. Morrant Baker.
Richard Barwell.
Henry Charlton Bastian, M.D., F.R.S.
John Syer Bristowe, M.D., F.R.S.
William Henry Broadbent, M.D.
Bernard Edward Brodhurst.
Thomas Bryant.
George Buchanan, M.D., F.R.S.
Thomas Buzzard, M.D.
William Cayley, M.D.
William Selby Church, M.D.
Edward Clapton, M.D.
Sir Andrew Clark, Bart., M.D., F.R.S.
John Couper.
John Croft.
William Howship Dickinson, M.D.
John Langdon Down, M.D.
Sir Dyce Duckworth, M.D.
Alfred B. Duffin, M.D.
[illegible] Edward Durham.
[illegible]ric Erichsen, F.R.S.
[illegible]rley, M.D.
[illegible] Heath.
[illegible]witt, M.D.
[illegible]olmes.
[illegible]ght Holt.
[illegible]thouse.
[illegible]ker Hulke, F.R.S.
[illegible] Murray Humphry, M.D.,
Jonathan Hutchinson, F.R.S.
J. Hughlings Jackson, M.D., F.R.S.
Sir William Jenner, Bart., M.D., F.R.S.
George Johnson, M.D., F.R.S.
Sydney Jones.
Charles Kelly, M.D.
John Langton.
George Lawson.
Henry Lee.
Sir Morell Mackenzie, M.D.
Arthur Trehern Norton.
Thomas William Nunn.
John William Ogle, M.D.
Sir James Paget, Bart., F.R.S.
Frederick William Pavy, M.D., F.R.S.
Thomas Pickering Pick.
Richard Douglas Powell, M.D.
Sir Richard Quain, Bart., M.D., F.R.S.
J. Spence Ramskill, M.D.
John Russell Reynolds, M.D., F.R.S.
Sydney Ringer, M.D., F.R.S.
James Rouse.
John Burdon Sanderson, M.D., F.R.S.
Septimus William Sibley.
Thomas Smith.
Reginald Southey, M.D.
Edward Symes Thompson, M.D.
Sir Henry Thompson.
Hermann Weber, M.D.
Samuel Wilks, M.D., F.R.S.
Alfred Willett.
Charles Theodore Williams, M.D.
Francis Willis, M.D.

ARRANGED ACCORDING TO DATE OF ELECTION.

1868 William Cholmeley, M.D.
Constantine Holman, M.D.
Thomas Tillyer Whipham, M.B.
Christian G. H. Baümler, M.D.
John Cavafy, M.D.
Frederick James Gant.
James Grey Glover.
T. Henry Green, M.D.
Howard Marsh.
Arthur Bowen Richards Myers.
Charles Prentis.
Adolphus A. Rasch, M.D.
Edgcombe Venning.
Sir Thomas Spencer Wells, Bart.
John Ford Anderson, M.D.
George Granville Bantock, M.D.
William H. Brace, M.D.
George Charles Bright, M.D.
Frank W. Cooper.
Julian Evans, M.B.
Edward Hooper May, M.D.
Henri Gueneau de Mussy, M.D.
William Warwick Wagstaffe.
Edwin T. Watkins, M.D.
William Ogle, M.D.
Protheroe Smith, M.D.
James Edward Pollock, M.D.
Franz Oppert, M.D.
William V. Snow, M.D.
Charles Drage, M.D.
John Tatham, M.D.
Frederick Royston Fairbank, M.D.
Henry A. Reeves.
Michael W. Rice, M.D.
William Henry Day, M.D.
John Meaburn Bright, M.D.
Berkeley Hill.
Louis Stromeyer Little.

1869 Robert Brudenell Carter.
Leonard William Sedgwick, M.D.
J. Warrington Haward.
Henry Frederick Augustus Goodridge, M.D.
Olliver Thomas Duke, M.B.

1870 William Rhys Williams, M.D.

1871 Julius Althaus, M.D.
Robert M. Gover, M.B.
Sir William Mac Cormac.
Alfred Playne, M.B.
William F. Butt.
George Wight, M.B.
Ebenezer Diver, M.D.
George Vivian Poore, M.D.
William Edward Stewart.

1872 Thomas Cooke
J. Burney Yeo, M.D.
Henry Harris, M.D.
William Pugin Thornton.
Robert Liveing, M.D.
Anderson Critchett.
J. C. J. Fenwick, M.D.
Andrew J. Myrtle, M.D.
Sir William Bartlett Dalby.
Thomas Ridge Jones, M.D.
George Slight, M.D.
Henry Sutherland, M.D.
Thomas Stretch Dowse, M.D.
William Wilberforce Smith, M.D.
Gifford Ransford, M.D.

1873 William Julius Mickle, M.D.
Robert William Parker.
David Lloyd Roberts, M.D.
George Henry Savage, M.D.
Heinrich Port, M.D.
Edwin Chisholm, M.D.
Thomas Churton, M.D.
William Hope, M.D.

1874 John Hammond Morgan.
Edward R. Rowland.
Claudius Galen Wheelhouse.
Charles Douglas F. Phillips, M.D.
W. M. Whistler, M.D.
Edward C. Stirling, M.D
William Henry Bennett.
Frederick G. Ree.
William Travers, M.D.
William Brown Holderness.
Andrew Clark.

1875 Thomas Barlow, M.D.
Marcus Beck, M.S.
Sidney Coupland, M.D.
Clinton T. Dent.
C. D. B. Hale.
Frederick Bowreman Jessett.
Edward Liveing, M.D.
F. J. Marshall.
Edward Nettleship.
William J. Walsham.
Rickman John Godlee, M.S.
Arthur Paul Sherwood.
T. Gilbart Smith, M.D.
James Frederic Goodhart, M.D.
William Richard Gowers, M.D., F.R.S.

1875 William Smith Greenfield, M.D.
Charles Macnamara.
Shirley F. Murphy.
Herbert W. Page.
Frederick Taylor, M.D.
1876 Arthur E. J. Barker.
Horatio Percy Symonds.
A. Balmanno Squire, M.B.
Archibald Weir, M.D.
David White Finlay, M.D.
Henry Greenway Howse, M.S.
Furneaux Jordan.
R. Clement Lucas, B.S.
James Mann Williamson, M.D.
George Buckston Browne.
Arthur Edwin Temple Longhurst, M.D.
1877 Robert Hogarth Clay, M.D.
A. Pearce Gould.
Edward Milner.
Henry Radcliffe Crocker, M.D.
David B. Lees, M.D.
Walter Hamilton Acland Jacobson, M.S.
Isambard Owen, M.D.
William Ewart, M.D.
Henry Morris, M.B.
William Miller Ord, M.D.
Walter Rivington, M.B.
Edward Seaton, M.D.
Henry Ambrose Lediard, M.D.
Bernard Roth.
John Tweedy.
Henry Hugh Clutton.
Malcolm Alex. Morris.
1878 George P. Field.
Thomas Warner Lacy.
Thomas Colcott Fox, M.B.
Felix Semon, M.D.
Henry de Fonmartin, M.D.
C. H. Golding-Bird, M.B.
Donald Wm. Charles Hood, M.D.
Sir Joseph Lister, Bart., F.R.S.
Francis Thomas Tayler, M.B.
F. de Havilland Hall, M.D.
Storer Bennett.
Sir William Stokes, M.D.
William Allen Sturge, M.D.
William Joseph Tyson, M.D.
W. Maunsell Collins, M.D.
James Barry Ball, M.D.
William Johnston, M.D.
Charles Robert Bell Keetley.
William Appleton Meredith, C.M.
1878 Frederick William Strugnell.
1879 William Adams.
William Edward Burton.
James Magill, M.D.
Wm. John Vereker Bindon, M.D.
Edward Markham Skerritt, M.D.
Henry Wilcox, M.B.
James Inkson, M.D.
John Abercrombie, M.D.
F. G. Dawtrey Drewitt, M.D.
Stephen Mackenzie, M.D.
William Harrison Cripps.
Francis Patrick Staples.
Geo. Courteney Henderson, M.D.
Thomas John Maclagan, M.D.
Henry Davy.
Thos. Walter Harropp Garstang.
George Lichtenberg, M.D.
Charles W. Mansell Moullin.
John Reuben Lunn.
Armand de Watteville, M.D.
George P. M. Woodward, M.D.
J. Neville Davies-Colley, C.M.
Robert Peel.
Frederic S. Dennis, M.D.
1880 T. Mark Hovell.
Wyndham Cottle, M.D.
B. Ball, M.D.
Henry Francis Baker.
Bernard O'Connor, M.D.
Charles Edward Beevor, M.D.
1881 George Henry Makins.
Robert William Burnet, M.D.
James Kingston Fowler, M.D.
Charles Edward Harrison, M.B.
Malcolm Macdonald McHardy.
Rushton Parker.
John Williams, M.D.
Montagu Lubbock, M.D.
James Black.
Charles Creighton, M.D.
William Pasteur, M.D.
Henry Fraser Stokes.
John Caldwell Uhthoff, M.D.
Henry Treutham Butlin.
H. A. Powell.
1882 George Robertson Turner.
E. Noble Smith.
Robert William Goldie.
Walter Baugh Hadden, M.D.
Frederick Charles Barker, M.D.
William Henry Kesteven.
Frederic Morell Mackenzie.
A. T. Myers, M.D.

1882 Daniel Colquhoun, M.D.
Seymour Taylor, M.D.
Francis Charlewood Turner, M.D.
Philip Henry Bindley, M.B.
Edward George Whittle, M.D.
D. H. Goodsall.
Frederick Henry Spooner, M.D.
J. W. Dennis Dallaway.
Frederick Haycraft Berry, M.D.
Herbert Collier, M.D.
Samuel West, M.D.
Emile Emond, M.D.
Eugene Goddard, M.D.
Charters James Symonds.
Angel Money, M.D.
C. F. Coxwell, M.B.
George Allan Heron, M.D.
Augustus Joseph Pepper, M.B.
Harrington Sainsbury, M.D.
George Thin, M.D.
Edwin Francis White.

1883 Charles Gross.
Anthony A. Bowlby.
James Anderson, M.D.
Cecil Yates Biss, M.D.
Percy Kidd, M.D.[4]
William Henry White, M.D.
George Oliver, M.D.
Hubert Montague Murray, M.D.
Robert Fitzroy Benham.
William Henry Allchin, M.B.
John Mitchell Bruce, M.D.
William Arbuthnot Lane, M.S.
Bernard Pitts.
Winckworth Tonge Smith, M.D.
William Hale White, M.D.
William Coode Adams, M.B.
William Anderson.
Robert Leamon Bowles, M.D.
James Dixon Bradshaw, M.D.
George Henry Jackson.
George Hunt Orton, M.B.
John Liston Paul, M.D.
Thomas Laurence Read.
Frederick Thomas Roberts, M.D.
Charles Alfred Ballance, M.B.
John Hopkins.
John Rostron Woodcock.
Alexander Wm. Macfarlane, M.D.

1884 Frederick Willcocks, M.D.
R. Percy Smith, M.D.
Edgar Duke.
John Mackern, M.B.
Paul M. Chapman, M.D.
Wilmot Parker Herringham, M.B.
Philip Henry Pye-Smith, M.D., F.R.S.
Charles Stonham.
Dudley Wilmot Buxton, M.D.
Edwin Worts.
Seymour J. Sharkey, M.B.
Frederick Treves.
William Elgar Buck, M.D.
John James Pringle, M.B.
Frederick Lucas Benham, M.D.
Walter Edmunds, M.D.
Stephen Paget.
Lambert Hepenstal Ormsby, M.D.
John Poland.
Edwin Leonard Adeney, M.D.
Victor Horsley, F.R.S.
Henry Carr Maudsley, M.D.
Bilton Pollard.

1885 Frederick Spicer, M.B.
Herbert Larder.
A. Hughes Bennett.
James Berry.
Frederick Walker Mott, M.D.
George Newton Pitt, M.D.
W. C. Everley Taylor.
Sidney Philip Phillips, M.D.
A. W. Mayo Robson.
Thomas Wakley, jun.
Herbert William Allingham.
Thomas William Thursfield, M.D.
Alexander Dalton Murray, M.B.
Robert Maguire, M.D.
Robert Alexander Gibbons, M.D.
Thomas Fitz-Patrick, M.D.
Tom Henry Sawtell, M.B.
Wm. Dobinson Halliburton, M.D.
Henry Brewer Tait.
Charles Rotherham Walker, M.D.
Richard Caton, M.D.
Arthur Henry Robinson, M.D.
Edward Sabine Tait, M.B.
William Bruce Clarke.
Charles Barrett Lockwood.
Reginald J. Ryle, M.D.
J. Michell Clarke, M.B.
Henry George Armstrong.
Roderick Maclaren, M.D.
W. Watson Cheyne.
Edward Liveing Fenn, M.D.

1886 Thomas Dixon Savill, M.D.
John Cahill.
Charles Henry Wade.
Benjamin Wainewright.

1886 Waren Tay.
William John Penny.
William Henry Battle.
James Hardie, M.D.
Francis Henry Hawkins, M.B.
R. Hingston Fox, M.D.
Henry Edward Juler.
John Ward Cousins, M.D.
Joseph Frank Payne, M.D.
T. Pridgin Teale.
H. H. Lankester.
Arthur T. Davies, M.B.
William C. Bull, M.B.
Charles Herbert Thompson, M.D.
Arthur Quarry Silcock.
Henry Handford, M.D.
Alfred Scott.
Albert Wilson, M.D.

1887 Archibald E. Garrod, M.D.
H. T. Rutherfoord, M.B.
Kankai Totsuka.
Thomas Oliver, M.D.
Francis George Penrose, M.D.
Samuel Herbert Habershon, M.D.
John Knowsley Thornton.
John Bland Sutton.
Oswald Auchinleck Browne, M.B.
Albert C. Butler-Smythe.
Joseph Arderne Ormerod, M.D.
C. J. Arkle, M.D.
J. H. E. Brock, M.B., B.S.
Francis William Clark.
A. H. Weiss Clemow, M.D., C.M.
Charles E. H. Cotes, M.B.
E. Hurry Fenwick.
Henry William Freeman.
R. Lawford Knaggs, B.C.
John D. Malcolm, M.B., C.M.
Sidney Martin, M.D., B.S.
Thomas Horrocks Openshaw, M.B.

1888 A. G. Barrs, M.D.
J. W. Batterham, M.B., B.S.
Montagu Handfield-Jones, M.D.
Alfred Rice Oxley, M.D.
Arthur Roper.
Robert Henry Scanes Spicer, M.D.
Campbell Williams.
Frederic S. Eve.
Alexander Morison, M.D.
Frederick Page, M.D.
Frederick J. Smith, M.B.
Frederick R. Walters, M.D.
Claude Wilson, M.D., C.M.
Charles H. Gage-Brown, M.D.

1888 Arthur Jamison, M.D., C.M.
J. H. Menzies.
Frank Ernest Roberts.
George Stoker.
Robert Ashton Bostock.
Hugh Armstrong.
Hyde Marriott, M.B.
Percy Warner.
J. F. James, M.B.
Edwin A. Barton.
W. P. May, M.B.
Philip D. Turner, M.D.
William S. Wyman, M.D.
Dawson Williams, M.D.
Augustus W. Addinsell, M.B., C.M.
John Anderson, M.D.
Henry French Banham, M.D.
George Haynes Hetherington.
David James Mason, M.D., C.M.
John Inglis Parsons, M.D.
Walter G. Spencer, M.S., M.B.

1889 Theodore Dyke Acland, M.D.
Raymond Johnson, M.B., B.S.
H. Davy Rolleston, M.B., B.S.
P. MacBride, M.D.
D. Newman, M.D.
Herbert Elwin Harris, M.D.
John E. Ranking, M.D.
William Alfred Wills, M.B.
Edward Ashby Fardon.
Wm. Alexander Carte, M.B.
Stanley Boyd, M.B.
George Ezra Halstead, M.D., B.S.
Edward Stewart, M.D.
Henry Herbert Taylor.
John Duncan, M.D.
Wm. Wallis Ord, M.B., B.Ch.
Leonard Arthur Bidwell.
Arthur J. M. Bentley, M.D.
Francis R. B. Bisshopp, M.B.
Henry Percy Dean, M.B., B.S.
Louis Albert Dunn, M.S.
Percy Flemming, M.B.
Daniel Mackay Forbes.
H. Pennell Hawkins, M.B., B.S.
D. M. Ross.
Lauriston Elgin Shaw, M.D.

1890 John Rose Bradford, M.D.
J. Fletcher Little, M.B.
Robert Robertson, M.D.
Ernest Solly, M.B.
James Taylor, M.B.

1890 Francis O. Buckland, B.A., M.B., C.M.
E. Baxter Forman, M.D.
G. Somerville Robinson.
Edmund W. Roughton, B.S.
Edgar Willett, M.B.
Thomas H. Rickard Crowle.
Robert A. Bindley.
James Calvert, M.D.
H. Roxburgh Fuller, M.D.
Arthur F. Voelcker, M.D.
Neville Wood.
W. Roger Williams.
Gilbert B. M. White, M.B., B.S.
Frederick Charles Wallis, M.B., B.S.
Alfred Parkin, M.S.
George A. Hawkins-Ambler.
James Harper, M.D.
Walter Henry Brown.
John Walter Carr, M.D.
Ernest Le Cronier Lancaster, M.B., B.Ch.

1890 Patrick Manson, M.D., C.M.
Miles Miley, M.A., M.B.
Edgar Herbert Thane, M.B.
Charles William Chapman, M.D.
Michael G. Foster, M.B., M.A.
Charles Edward Sheppard, M.D. (*deceased*).
1891 Frederic Francois Burghard, M.D., M.S.
H. E. Leigh Canney, M.B.
Roger Neville Goodman, M.B.
Herbert Furnivall Waterhouse, M.D.
James E. R. Grant.
Leonard Remfry, M.D.
Walter William Hunt Tate.
William Lee Dickinson, M.B.
Greville MacDonald, M.D.
J. Kingston Barton.
Henri Dardenne, M.B.
J. Dundas Grant, M.D.
W. Kington Fyffe, M.B., B.C.
Albert Carless, M.S., M.B.

RULES.

(Revised by the Council and adopted at the Annual Meeting of the Society held on January 9, 1891.)

SECTION I.—OBJECTS AND CONSTITUTION OF THE SOCIETY.

1. The Clinical Society of London is instituted for the cultivation and promotion of the study of practical medicine and surgery, by the collection of reports of cases of interest, especially of such as bear upon undetermined questions in pathology or therapeutics.

2. The Society shall consist of ordinary and honorary members. The ordinary members shall be either *resident* (those living within six miles of Charing Cross) or *non-resident* (those living beyond six miles from Charing Cross).

3. All legally qualified medical practitioners shall be eligible for nomination as members.

4. The Officers of the Society shall be elected from among the ordinary members, and shall consist of a President, four or more Vice-Presidents, a Treasurer, and two Secretaries, who with twenty other members shall constitute the Council.

SECTION II.—ELECTION AND ADMISSION OF ORDINARY MEMBERS.

1. Candidates shall be proposed in writing by three members to whom they are personally known.

2. Proposal papers, duly signed according to the above rule, shall be suspended for one meeting exclusive of that at which they are presented; the ballot taking place at the third meeting. No person shall be declared to be elected unless he shall have two thirds of the recorded votes; not less than fifteen members being present and recording their votes.

3. All newly-elected ordinary members must be admitted by the President, or by some member acting for him, on or before the fourth meeting after their election, unless further time be granted by the Council.

4. The following form shall be used on the admission of ordinary members:—"By the authority, and in the name, of the Clinical Society of London, I admit you a member thereof."

SECTION III.—ELECTION OF HONORARY MEMBERS.

1. The Council shall have the power of proposing men of distinction in medicine or surgery for election as honorary members. The election of such members shall be conducted in the same manner as that of ordinary members, and they shall have the privilege of attending the ordinary meetings of the Society.

SECTION IV.—RETIREMENT OR EXPULSION OF MEMBERS.

1. Any member may retire from the Society after signifying his intention in writing to the President, and paying whatever contribution may be due from him to the funds of the Society.

2. A member who has retired from the Society, and wishes to rejoin it, must be proposed, balloted for, and admitted in accordance with Rules 1, 2, 3, Section II.

3. The expulsion of a member can take place only at a general meeting of the Society, specially convened by the Council for the consideration of the case; two thirds at least of the members present voting for the expulsion, and not less than thirty members recording their votes. Of such meeting the Council shall give at least fourteen days' notice in writing to all the members of the Society.

SECTION V.—CONTRIBUTIONS OF MEMBERS.

1. Every ordinary member when elected shall pay an admission fee of two guineas, and shall not be required to

pay any further subscription for the session during which he has been elected.

2. Every resident ordinary member shall pay, in advance, in the month of October in each year, an annual subscription of one guinea; but members elected at any meeting subsequent to the first meeting in April of any year, shall be exempt from paying any subscription for the next following session.

3. Any resident member whose subscription shall not be paid within twelve months after it has become due shall cease to be a member of the Society.

4. Ordinary resident members of the Society may compound for the entrance fee and annual subscription for life by a payment of fifteen guineas made in advance.

5. Ordinary non-resident members, residing more than six miles from Charing Cross at the time of their election, shall pay an entrance fee of two guineas, which shall exempt them from any further payment while they continue non-resident.

6. Ordinary resident members, on becoming non-resident, shall cease to be called on for the annual contribution while they continue non-resident.

7. Ordinary non-resident members on becoming resident shall resume the payment of the annual contribution.

SECTION VI.—ELECTION OF OFFICERS AND COUNCIL.

1. All the ordinary members shall be summoned by letter to the Annual Meeting in May, notice being given a week beforehand and the hour of meeting being stated.

2. The President, Vice-Presidents, Treasurer, and Secretaries shall be elected by ballot at each Annual Meeting, and shall commence their duties on the first day of the October following.

3. One third of the members of the Council shall be replaced at each Annual Meeting by an equal number of ordinary members chosen from the Society at large.

4. Balloting lists of the members recommended by the Council to fill the vacant offices shall be prepared by the Secretaries, and forwarded, together with the summons to the Annual Meeting, to every ordinary member of the Society.

5. Two scrutineers appointed by the President at the

commencement of the Annual Meeting shall receive the balloting lists during the first hour, at the end of which they shall report the result to the meeting.

6. In the event of equality of suffrage the President shall determine by lot.

7. The Council shall have the power of filling up any vacancies which may occur in any of the offices of the Society between one Annual Meeting and another.

SECTION VII.—THE PRESIDENT AND VICE-PRESIDENTS.

1. The President shall regulate all the proceedings of the Society and Council, state and put questions, interpret the application of the rules and regulations, and decide every doubtful point. He shall check irregularities and enforce the observance of the laws. He shall sign the minutes of General and Council Meetings, and return the thanks of the Society to the authors of communications.

2. In the absence of the President, one of the Vice-Presidents, the Treasurer, or some other member chosen by the Council, shall perform his duties.

SECTION VIII.—THE SECRETARIES.

1. The Secretaries shall have the management of the correspondence of the Society and Council.

2. The Secretaries shall attend all the meetings of the Society and Council. They shall take minutes at each meeting, which they shall read at the following meeting. They shall notify to candidates their election as members.

3. The Secretaries shall keep a list of cases submitted for reading, and also a register of the cases read at the ordinary meetings of the Society, and shall receive and have charge of all papers intended for publication in the Society's *Transactions*, and shall prepare for publication, and see through the press, the annual volume of the Society's *Transactions*, and such other volumes as the Council may decide to issue.

SECTION IX.—THE TREASURER.

1. The Treasurer shall receive all money due to the Society, and shall make all payments which may be ordered

by the Council; keeping a particular account of such receipts and payments.

2. The Treasurer shall keep a printed receipt-book for annual and other subscriptions. Each receipt shall be filled up with the name of the payer, the date, and the session for which the subscription is paid. Each receipt shall be signed by the Treasurer and countersigned by the Collector, who shall, when he gives the receipt, enter and sign a copy of the particulars on the counterfoil of the receipt-book.

3. The President, one of the Secretaries, and two members of the Society, nominated by the President at some meeting of the Society previous to the Annual Meeting, shall form a Committee to audit the Treasurer's accounts.

4. The Audit Committee shall present a written report to the Society at the Annual Meeting, and shall be prepared to answer any questions regarding the state of the funds of the Society.

SECTION X.—THE COUNCIL.

1. The Council shall have the management of the affairs of the Society.

2. The Council shall meet previously to the ordinary meeting on the second Friday in every month during the session, and at such other times as may be necessary. Five shall form a quorum. Notice of all meetings, together with a list of agenda, shall be transmitted by the Secretaries to every member of the Council.

3. The President or any three members of Council may call an extraordinary meeting of the Council.

4. The Council shall determine questions by vote, or by ballot if demanded; the President having in both cases a casting vote in addition to his vote as a member of Council.

5. The Council shall deliberate and decide upon all questions relating to the publication of the Society's *Transactions*.

6. The Council shall appoint annually two of the Vice-Presidents, who, with the Secretaries, shall form a Committee of reference for deciding, when needful, on the acceptance of papers submitted to the Society.

7. The Council shall appoint annually a Publication Committee to determine and report to the Council which of the papers and illustrations shall be published in the Society's *Transactions*; such Committee to consist of the President, Treasurer, and the Secretaries.

8. The Council shall, from time to time, appoint such Committees, make such regulations, and issue such orders, as shall appear to them conducive to the good government of the Society and to the proper management of its concerns.

SECTION XI.—TRANSACTIONS.

1. The *Transactions* of the Society shall be published at such times and in such form as the Council may direct.

2. The *Transactions* shall be presented to all honorary members of the Society.

3. The *Transactions* shall be presented to all ordinary resident members of the Society who shall have paid, or compounded for, their annual subscriptions, and to such non-resident members as may have paid the sums prescribed in Rules 4, 5, Section XI.

4. Every non-resident member of the Society elected prior to January 9th, 1874, shall be entitled either to purchase the *Transactions* of the Society at prime cost, or, on payment of a composition fee of Two Guineas, to have delivered to him at any place in the United Kingdom, without further expense, a copy of every volume of the Society's *Transactions* which may be published subsequently to such payment.

5. Every non-resident member of the Society elected subsequently to January 9th, 1874, shall be entitled, on payment of the sum of Five Guineas in addition to the usual admission fee, to have delivered to him at any place in the United Kingdom, without further expense, one copy of every volume of the Society's *Transactions* which may be published subsequently to such payment.

6. Every resident member of the Society who may become non-resident shall be entitled, on payment of the sum of Five Guineas, to have delivered to him at any place in the United Kingdom, without further expense, one copy of every volume of the Society's *Transactions* which may be published subsequently to such payment.

SECTION XII.—ORDINARY MEETINGS OF THE SOCIETY.

1. The ordinary meetings of the Society shall be held on the second and fourth Fridays in each month, from the second

Friday in October to the fourth Friday in May of each year, and shall begin at 8 P.M. on evenings when living specimens are demonstrated, and at 8.30 P.M. on other evenings.

2. Each member may introduce two visitors on writing their names in a book kept for the purpose. The same visitor shall not be introduced more than three times during one session.

3. The business of the ordinary meetings shall consist in (*a*) the formal demonstration of living specimens, and (*b*) the reading and discussion of reports of cases of clinical interest.

4. The demonstration of living specimens shall take place during the first hour of alternate meetings, commencing at 8 o'clock. Preference shall be given to cases which have been notified to the Secretaries, and announced in the medical journals.

*** The demonstration of a case under the foregoing rule does not preclude a formal report and discussion of the case at a future meeting of the Society.

5. Reports of cases (which must be written in form fit for printing) shall not, as a rule, be of such length as to occupy more than ten minutes in delivery.

*** When possible, the subjects of the reports should be exhibited.

6. An abstract of each communication, for publication in the medical journals, shall be forwarded to the Secretaries not later than one week before the meeting at which the communication is announced for reading.

7. All papers shall be handed to the Secretaries immediately after being read.

8. Every paper read before the Society shall be the exclusive property of the Society, and the author shall not be permitted to withdraw it, except by permission of the Council. If, in contravention of this rule, a paper read before the Society be published elsewhere by the author, it shall thereby be disqualified for admission into the Society's *Transactions*.

9. Cases already published by the author shall not, as a rule, be received by the Clinical Society.

10. Cases shall not be entered on the list for reading until they are actually in the hands of the Secretaries.

11. Cases announced for, but not read at a meeting from want of time, shall be taken in their order at the following meeting.

12. At the ordinary meetings of the Society nothing relating to its laws or management shall be considered. The

discussions shall be strictly confined to questions relating to communications.

13. The election of new members may take place at any ordinary meeting; at which fifteen members shall be present. Ten shall form a quorum for ordinary business.

14. The President shall have authority to nominate from time to time, as may seem expedient, committees of the Society for the purpose of conjoint investigation of clinical and especially therapeutical questions, and of any moot points which arise in the course of the discussions. Such committees shall consist of three or more members of the Society.

SECTION XIII.—ANNUAL AND SPECIAL MEETINGS.

1. The annual meeting of the Society for the election of the Officers and other members of the Council shall be held on the night of the fourth Friday in May.

2. The President and Council may at any time, on giving notice a week beforehand, convene a special general meeting of the Society for the consideration of particular business, the nature of which must be specified in the letter of summons convening the meeting.

3. New rules, or alterations in existing rules, shall be proposed by the Council only at the annual meeting of the Society, notice of all such proposals being transmitted to every member together with the summons to the annual meeting. For the adoption of rules or changes so proposed, the votes of two thirds of the members present must be in favour of the proposal.

4. Any member of the Society may suggest to the Council alterations in the rules, by letter addressed to the Secretaries.

SECTION XIV.—OF THE SOCIETY'S PROPERTY.

1. There shall be three Trustees of the Society, who shall stand possessed of the funds and securities of the Society for the time being, vested in them upon trust from time to time, and shall pay the interest and dividends thereof to the Treasurer of the Society, and shall apply and dispose of such funds and securities for the benefit of the Society in such manner as shall be directed by the Council, subject to the

control of general meetings of the Society. Upon going out of office the Trustees shall execute all deeds and instruments which the Council shall require, as necessary for vesting in the Council all their interests in the funds and property of the Society for the time being.

2. At the first meeting of the Council held after the Annual General Meeting, the Council shall fill, by ballot, from among themselves or from the other members of the Society, any vacancy which may have occurred in the office of Trustee. And provided the choice of persons to fill such vacancies shall be confirmed by the Council at their next meeting, such persons shall be declared duly appointed Trustees of the Society accordingly.

3. Should the choice of such persons to be Trustees not be confirmed by the Council at their next meeting, the Council shall at their following or subsequent meetings proceed to a new choice, and confirmation thereof, until the existing vacancies shall be filled up.

PROVISIONAL REGULATIONS

For the Demonstration of Living Specimens.

ADOPTED BY THE COUNCIL IN ACCORDANCE WITH RULE 8, SECTION X.

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1. The oral demonstration of a case shall not, as a rule, occupy more than five minutes.

2. Questions may be asked with a view to the elucidation of a case, but no lengthy discussion shall be allowed.

3. Such demonstration shall not preclude the reading of a formal report of the case at a subsequent meeting should the exhibitor desire it, when the case may be again shown.

4. Living specimens shall be in attendance not later than a quarter to 8 o'clock; and in order to avoid interference with the later work of the meeting, all living specimens will be dismissed at 9 o'clock.

5. At least ten days' notice shall be given to the Secretaries by members wishing to demonstrate living specimens, in order that they may be announced in the Journals.

6. Cases shall be demonstrated in the order in which they have been notified, unless grouped by the Secretaries for convenience of demonstration.

7. Living specimens brought to a meeting, but not previously announced, will be taken if time permit.

8. A description of living specimens in writing, and in a form fit for publication, shall be handed to the Secretaries at the close of the meeting, for publication in the *Transactions*, or not, as the Council may direct.

9. If only a limited number of living specimens be forthcoming, the reading of papers shall commence at 8.30 P.M., or at any time between 8.30 and 9 o'clock, on the completion of the demonstrations.

REPORT

OF THE

COUNCIL OF THE CLINICAL SOCIETY.

DECEMBER, 1890.

THE COUNCIL are able to report an exceptionally prosperous year. The members of the Society now number 518, of whom 33 were elected during the past year. The financial position of the Society is satisfactory, as shown by the accompanying statement of accounts; the sum of £113 19*s.* 6*d.* being carried forward, as compared with £58 14*s.* 4*d.* in the previous year. The invested reserve remains as before, £600.

The Council have to regret the death of two of their distinguished honorary foreign members, Dr. Bigelow and Professor von Nussbaum; and of the following ordinary members:—Mr. James E. Adams, Sir William Gull, Bart., Dr. William Henry Holman, Dr. Cyril Jecks, Dr. Walter Pearce, Mr. Cuthbert Ring, and Mr. Arthur F. McGill.

The question of the incubation period of certain infectious diseases is still under the consideration of the Committee appointed to investigate the subject.

The available copies of the Rules of the Society having been exhausted, the Council have taken the opportunity of subjecting them to a complete revision. The suggested modifications will be duly submitted to the Annual Meeting, and it is hoped will be acceptable to the members, as many of the Rules in their original form had become obsolete or impracticable.

The success which has attended the systematic demon-

stration of living specimens has justified the Council in making this a permanent feature of the Society's work.

The Council in their last report expressed the hope that the removal to the new premises would lead to increased prosperity. The accession of members and the improved attendance at the ordinary meetings leave little doubt that this hope will be fully realised.

TREASURER'S STATEMENT OF ACCOUNTS, 1890.

1890	Dr.	£	s.	d.
	To balance at Bank, 1st January, 1890 .	58	14	4
	„ 322 Subscriptions at 21*s.* . . .	338	2	0
	„ 11 „ received through Bank	11	11	0
	„ 37 Admission fees at £2 2*s.* . . .	77	14	0
	„ 1 Composition fee	15	15	0
	„ Sale of *Transactions*:			
	By Longmans	25	10	9
	„ Dividends on Consols:			
	January £4 0 6			
	April 4 0 6			
	July 4 0 6			
	October 4 0 6			
		16	2	0
		£543	9	1

1890	Cr.	£	s.	d.
	By Cost of *Transactions*, Vol. XXIII:			
	Paper, printing, binding, and delivery	132	0	11
	Illustrations	56	12	0
	Advertising and Longmans' charges .	5	4	10
	„ Meetings:			
	Expenses of rooms	105	0	0
	Refreshments	33	8	0
	R. Coldrey, for attendance . . .	7	10	0
	„ Treasurer and Hon. Secretaries:			
	Assistant Secretary	18	18	0
	Bureau for Hon. Secretaries . .	15	15	0
	Commission to Collector . . .	15	15	0
	Printing and Stationery . . .	34	0	10
	Petty expenditure	5	5	0
	„ Balance in hand	113	19	6
		£543	9	1

Examined and found correct, *December 30th*, 1890. { JAMES B. BALL, M.D., BILTON POLLARD, } *Auditors.*

WILLIAM M. ORD, M.D., *Treasurer.*

{ THOMAS BARLOW, M.D., WILLIAM H. BENNETT, } *Hon. Secs.*

INAUGURAL ADDRESS

DELIVERED AT THE

CLINICAL SOCIETY OF LONDON

BY

SIR DYCE DUCKWORTH, M.D., LL.D.,

PRESIDENT.

GENTLEMEN,—The honour you have conferred upon me by placing me in this chair is one that any physician may be proud of, and while I thank you for it I may express my sense of the responsibility which such a position carries with it.

I cannot but feel that this distinction has come to me at an earlier period of my professional career than has been customary. I am forcibly reminded of this in reviewing the list of my predecessors in this chair. As an original member of the Society I naturally now recall the meetings preliminary to its foundation, and especially do I remember the delivery of the remarkable address inaugurating its first session by Sir Thomas Watson in 1868.

This Society has always had great interest for me, those studies which have for their special object the promotion of bedside knowledge, and of the best methods of treating the sick, having drawn me originally to the study of medicine.

The progress of this Society has been very remarkable. The twenty-three volumes of its Transactions well attest

the importance of the work that has been done. It is of the essence of this Society that it recognises and encourages the practice of medicine and of surgery as arts, and I hold it to be more than ever important at this time not to lose sight of the fact that practising members of our profession are, or ought to be, artists. Though we seek at every step a scientific basis for our practice, we are not ashamed to confess that the exigencies of human frailties and suffering compel us occasionally, nay, frequently, to make therapeutic excursions which are alone justifiable as honest methods of empiricism, contrived for the help and comfort of our patients. It is not too much to affirm, even in this last decade of the century, that if any one seeking to practise medicine were to deny this position, or to refuse to act in accordance with it, he could not do his duty properly as a physician, or bring relief to the bedside.

Hence we meet in this Society to cultivate the best methods of our clinical art, to quicken our powers of diagnosis, to store our minds with facts relating to the phases of diseases, and to learn how better to apply remedial measures. The task is pleasant and hopeful, though one must ever feel the smallness and imperfection of one's knowledge under the most favourable circumstances. If it be true, as Peter Mere Latham said, that "great experience is not all experience," it is no less true that he is the best practitioner who sees most of disease, and has most to do in trying to alleviate it.

It cannot be denied that we now carry on our work in a manner very different from that pursued by our forefathers. Not only are the individual practitioners of medicine and surgery greatly changed by reason of more widespread education and exact knowledge, but there has grown along with this, on the part of the general public, a tendency to peer into matters scientific and medical, which might possibly be expected to widen its conceptions and enlarge its sympathies, but which, unless I am greatly mistaken, has done little more than excite a morbid appetite for novelties, and add to the credulity with which the populace has always been credited.

This spirit is apparently much engendered by the enterprise of cheap journalism and the publication of pseudo-scientific articles in magazines. This is, in my thinking, very unwholesome, and it is a matter of clinical interest. I repeat, it has a clinical interest for us, because it is

unquestionably harmful for patients to have prejudices respecting their ailments or the treatment of them. They lose confidence in their advisers, and unconsciously place themselves in a wrong attitude as regards their recovery. The attitude of a patient towards his medical adviser is one of trust and absolute confidence. It should be the same as that held by the ordinary passenger in a ship towards the commanding officer of the vessel. If such a passenger vexed himself with his own theories of the winds and currents, or the technicalities of navigation, and had power to bring them into effect, what untoward results might not accrue! From this broadcast spread of minute details respecting disease and methods of treatment the public now suffers, as I believe, severely. Patients are more difficult to treat, they endure many unnecessary apprehensions and misgivings, and they thereby cause a great amount of annoyance to their medical attendants.

Yet I will not only blame modern sensationalism and the advertisements of magazines and newspapers for bringing in this unhappiness. I will even venture to lay some of it at our own door. Happily, as a profession, we still retain a large share of public confidence and esteem. We forfeit a good deal of it by our own fault.

Were it not for the charity, self-denial, and patience so constantly exhibited by us as a body—an array of Christian virtues always winning and invincible—I fear it might often go hard with us in respect of the fashions and theories we adopt from time to time. My own professional lifetime already too well illustrates what I mean. When I was engaged in the study of osteology, brandy was reckoned the supreme remedy for acute disease. When I was a clinical clerk, mercury was considered no antidote to the manifestations of lues venerea, and was held to be not only useless in all diseases, but mischievous. Later on, brandy was held to be not only needless but injurious in acute disease. Next came a wave of unbelief in respect of therapeutics generally, the appeal being in all things the witness of the microscope to the futility of any such efforts. And accordingly this all-important branch of our work fell back, and the best efforts in the profession came, as I say, with despairing tones from the deadhouse. It was to check this tendency that the first President of this Society spoke with the gravity he did on the occasion I have already referred to, and reminded us that our business as physicians is to

heal the sick. This Society has well done its part in cultivating this branch of our art.

But even now, we do well to be on our guard against premature adoption of crude methods, and the shaping of our practice in deference to the beguiling influence of prevalent fashions. Chemists and purveyors of sundry foods nowadays venture to tell us when and how to prescribe their medicines and preparations, and there are to be found members of the profession who listen to them.

To this instability and pandering to novelties it is that we lose much credit as a profession. We are respected for our personal worth, but are not unfairly twitted for our theoretical inconsistencies. Much of this might be saved if we would calmly ask ourselves—what shall we say of this or that new therapeutic method five years hence?

I am led to accentuate these remarks at the present moment, when we are in the presence of the extraordinary excitement that attends the discovery of a material which appears to have a noteworthy effect upon tubercular disease.

The announcement of such a discovery by a Berlin professor of the acknowledged distinction of Robert Koch could not fail to enlist an interest which would naturally spread beyond the limits of our profession, and hence the public, stimulated by the enterprise of journalism, has been eager to learn the results of this method of treating so widespread and grievous a disease as tuberculosis.

In reviewing the conduct of the whole matter up to the present moment, I feel bound to express my own personal opinion to the effect that many unseemly features have been noticeable.

First, it appears to me that Professor Koch, for whose scientific position, probity, and trustworthiness I have the highest esteem, has himself been unduly and unfairly pressed in respect of disclosing his research. I do not gather that he was prepared to recommend the immediate adoption of his method on so wide a basis as has already been carried out. The work of a bacteriologist, like that of any other philosopher, cannot be hurried, nor his incomplete researches be wrested from him and made public property under any pretext without risk and the possibility of mischance. Good or bad results may come, but it is surely for the originator of a discovery to make known his own disclosure in his own way, and at the time he thinks best. I think Professor Koch's hands have been forced, and in an unfair manner. At the

present moment we have no certain knowledge, in respect of this discovery, as to the relation between the Professor and the German Government on the one hand, and those between him and the profession in all countries on the other.

Secondly, I note that an unwholesome excitement has been fostered within our own ranks by an undue haste to carry out a plan of treatment which has not as yet been authoritatively and minutely recommended by the author of it, and of which as yet we know practically nothing.

It may be that matters have proceeded so fast and so far that Professor Koch has practically lost control of the practice of any method he may believe to be the best. But for this we cannot blame him, but rather an undue precipitancy on our part, which I declare to be unseemly in a matter of such gravity. If the public has been excited, that was but to be expected; but that we, with our philosophical training and experience in such matters, should lose our calm judgment, and hurry on with the public to wrest this matter out of its proper channels, is, I think, sorely regrettable and most unseemly. We should have waited till Professor Koch published his researches and laid his method formally before the profession.

Such knowledge as we have at present encourages the belief that a material of powerful energy has been produced, having some relation with such textures as are the seat of tubercular disease. What these relations are, and what power this compound, whatever it be, may have of checking tuberculosis, time alone will show. When the composition of the material is made known to us, and the conditions for its employment are prescribed by the discoverer himself, the profession will be in a position to prosecute the inquiry, and in five or ten years' time we may hope to have gained a large knowledge of the whole matter.

Since I committed the foregoing remarks to paper, Professor Koch has tardily broken silence, and divulged some meagre particulars respecting the nature of the fluid now so prominently connected with his name.

It is hard for us, at this distance from Berlin, to conceive why such delay should have been thought necessary, and we can only now regret that the untimely and incomplete revelation of his researches should have placed this eminent man in a position which we in this country must plainly regard as unprofessional. While I venture unhesitatingly to affirm this, I still feel that some malign influences and unwise

counsels have had a restraining effect upon the work of a man whom we have hitherto regarded as a conscientious and philosophic observer, causing him to pursue a course which we may trust no one now more bitterly regrets than himself.

In the face of such reports as we can study, and with the rigid criticism of Professor Virchow on the matter, we may be pardoned if we hesitate to apply this method to the needs of our fellow creatures for some time to come. For my own part, I will venture to say that I have not felt justified in once sanctioning its practice up to the present moment, and I am quiet content to be charged with timidity or lukewarmness in investigation for my conduct. My rule in practice is never to treat any patient in a manner that I am not prepared to apply to a near relative of my own, and nothing at present would induce me to sanction Professor Koch's method under these circumstances. In other words, I would express the opinion that the time has not yet arrived for its application to tubercular patients, and that its practice is at present unwarrantable unless by the absolute desire of the patient and his friends, who must assume all risks and responsibilities. In saying this, I can hardly expect to carry all my hearers with me, but I am now speaking for myself and not in the name of this Society.

Without doubt, this method is founded on the prevalent doctrine of the all-important bacillary element in tuberculosis. I am not prepared to accept this doctrine as of overwhelming importance in the case. I am too firmly convinced of the doctrines of diatheses in relation to tuberculosis and other morbid states, of the high importance of paying due regard to the tissue-proclivities of families and of individuals, and I believe that the bacillary elements, for example, are only a part, and possibly not the most essential part, of this tubercular process. I feel inclined to question very much whether we shall all be paying such heed to bacilli —say in ten years' time. May it not be that something else will then be occupying our attention very much as bacilli now do? Such considerations may at least make us pause, keep our minds clear, and our judgments calm.

It is not easy to resist the pressure which the public is ever ready to put on us in matters of this kind, knowing nothing of the difficulties of the problems, but hungering for action, for novelty, and for results, and just as ready to throw upon us the blame of failure and mischance should they occur.

It appears to be forgotten nowadays that it is for us to guide the public in these matters. We rather lend ourselves to be misled by it. We dread to confess our ignorance, forgetting that such a mental attitude is the first step towards knowledge, and we pursue novelties so assiduously that we fail to add certainty and trustworthiness to our present methods.

It must be admitted that bedside studies are now conducted more than ever on a scientific basis, and because of this a large measure of distrust has come to be attached to practices and methods which have been handed down to us by tradition.

Our position is this, we are learning to practise therapeutics with more and more exactness, but the whole field is not thus covered. We have still to treat patients as well as processes of disease occurring in such persons. The personal factor in such case can never be safely neglected. So much so is this true that he who has no faculty for managing his fellow-man can have no true clinical skill in treating his patient. This is, however, often lost sight of, and hence the common failures on the part of men of great attainments to become successful practitioners. I need hardly say that the success I allude to has no reference to mere attainment of wealth, but relates to the relief of suffering and the restoration of sound health.

Let it be fairly stated and fully understood that our existence in the body-politic as clinical physicians and surgeons is only justified by our efforts to relieve suffering and promote recovery from disease. Our primary object in life is not to advance pure science as such, or to make discoveries, but to apply the lessons derived from these sources to the daily needs of suffering humanity. That such contributions do come ever and anon from within our ranks is a matter highly creditable to the profession; but, I repeat, our prime calling as clinicists is to minister to the needs of the sick. This is an art, and we are, or ought to be, artists rather than scientists. To this end our early training must be scientific. To aid us fully in our dealings with all classes of society we must also have such training in literature as becomes men belonging to a profession such as ours. And in the early professional curriculum I will say that I lay great stress on the value of the study of botany as a training for clinical work in after life—a study now deliberately neglected; while for mental culture I make bold to affirm, in spite of all

opinions to the contrary, that nothing can, or ever will, take the place of the old classical studies.

I must ask your indulgence, gentlemen, if in this address I have ventured to depart somewhat from the tone adopted by those who have preceded me in this chair. My remarks may appear rather too censorious for such an occasion as the present. Assuredly, I am neither an optimist nor a pessimist in respect of the outlook before us as clinicists. I am, happily, too young to be a mere *laudator temporis acti*, but I am old enough to have witnessed too many changes in respect of prevalent doctrines to allow myself to be run away with by any one of them too exclusively.

We have many triumphs to take note of, and cause for deep satisfaction in recounting the advances made even in the last five-and-twenty years. Most, if not all, of these have come quietly and without unseemly excitement, and such indeed is the manner in which the secrets of nature are to be learned. By patient, untiring work, by honest observation, by calm and repeated questionings alone may we hope to make a steady advance all along the line—an advance of which we shall never be ashamed, and one which cannot fail to redound to our honour. In this spirit alone shall we prove ourselves worthy successors of the great clinical masters who have left their mark for all time on the history of our noble art.

COMMUNICATIONS.

I.—*A case in which Suppuration in the Left Hip-joint was treated by incision: erasion of an abscess cavity in the neck of the femur on which the suppuration depended: primary union and recovery with a perfectly moveable joint.* By William Henry Battle. *Read October* 10, 1890.

THE patient, a girl æt. 6, was admitted into the East London Hospital for Children at Shadwell on September 25, 1889. She was an emaciated, pale, and very sensitive child, with long eyelashes, of whom the following account was given. She had been quite well until six weeks before, when she first had a feverish cold and epistaxis with headache, and wanted to lie down. She was feverish for a fortnight. Then she complained of pain in the arms and legs, not especially in the joints, and had been unable to walk during the last five weeks. She had complained much of pain in the right knee, screaming on manipulation of the right leg, and had wasted considerably. A swelling in front of the chest was noticed the day before admission. She was not lame in any way before five weeks preceding admission. Had measles three years ago, no other illness.

Family history good, one other child healthy, one died of fits when four months old. There was no history of syphilis in the family or in the child.

The right leg was apparently shorter than the left, and the anterior superior spine on that side was lower than that on the other. Flexion, abduction and adduction were very

much impaired on the right side, there being very little movement at the hip-joint; the limb was inverted. The right thigh was considerably larger than the left, the circumference of the right being 11¼ inches, of the left 9 inches. There was considerable lordosis. The right gluteal fold was almost effaced, and there was much pain on manipulation of the thigh. The patient was suffering from incontinence of urine, and the urine, which was acid, sp. gr. 1020, contained a little albumen, and some pus, but no blood. Much of it was passed in bed. In the hypogastric region of the abdomen, extending from the pubes to midway between pubes and umbilicus, was a hard swelling to be felt, somewhat rounded upwards, dull on percussion, passing the mid-line to the left and the semilunar line on the right side, but slightly tender on manipulation, without œdema of the tissues over it, and without fluctuation. In the substance of the right pectoralis major muscle was a large fluctuating swelling, extending from the second to the fourth rib, but further laterally. Temperature on admission 99·6°, and at night 101·6°.

On the 27th, when I saw the patient, there was a considerable abscess behind the right hip-joint, in the gluteal region. An incision in the line of Langenbeck's incision for removal of the head of the femur was made, and a considerable amount of pus evacuated. The finger passed into the abscess cavity felt an opening in the capsule of the hip-joint behind the neck, and to the inner side of the great trochanter. Corrosive sublimate was used during the operation, and a drainage-tube inserted; a long outside splint was also applied. The abscess over the chest-wall was aspirated. The bladder was sounded but no stone could be felt, nor was there any enlargement in the kidney regions. The swelling in the abdomen did not fluctuate.

From this date until November 8 progress was satisfactory, the discharge from the right hip diminished in quantity, and there was no re-collection of pus in the pectoral region. The swelling in the lower abdomen did not change to any appreciable extent. The temperature was generally normal, but occasionally higher in the evening. On the evening of the 8th and morning of the 9th of November it rose to 103°, and she complained much of pain in the left hip; there had, however, been some slight pain for two days. There was marked fulness in front of the joint. The cystitis had returned with considerable incontinence. Fomentations were applied to the lower part of the abdomen.

From the 9th to the 19th the temperature continued of a hectic character, and on the latter date considerable œdema of the front of the thigh had manifested itself, and fluctuation, which had been present for some days over the front of the joint, was more evident. The limb to which extension had been applied on the onset of the inflammatory symptoms was everted. As the suppuration was evidently extending, it seemed advisable to incise the joint and evacuate the pus. This I did as the patient was lying in bed in the ward, employing the anterior incision. When the capsule of the joint was reached, it was found softened and distended, so that it was possible to perforate it with a director. When this was done much fluid of a turbid character, containing flakes and pus, escaped. The opening was enlarged, and the finger passed into the joint detected the presence of a hole the size of a small pea in the anterior aspect of the neck of the femur, and external rotation of the limb, after enlargement and retraction of the wound, permitted me to pass a bullet probe through this into a small cavity. A sharp spoon was then introduced into this cavity, the interior scraped out, and some granulation tissue removed with gritty bone. This cavity, which was situated below the epiphysis of the head, was apparently about the size of a filbert nut or even larger, and it appeared after the scraping as if a circumferential layer of compact tissue was alone left as a sort of cylinder at that point in the neck of the bone. The margin of the opening when first examined felt rounded and smooth, and the external surface of the bone appeared normal. The cartilage of the head appeared normal, the synovial membrane swollen, and like velvet, but no granulation growth was seen or felt. The cavity in the bone (as also the joint) was washed out with a strong solution of chloride of zinc, and then syringed out with perchloride of mercury solution 1 in 1000. Six small catgut sutures passed deeply were used to bring the edges of the incision together. No drainage-tube was employed. Perchloride dressings with wool were applied and firmly bandaged to the limb, and then a bracketed outside long splint put on with extension.

The wound was dressed on the 22nd, as the dressings had become soiled by the urine. It was looking well, but there was some irritation round the stitches. There had been no rise of temperature, and no pain since the operation; and at this dressing she complained of no pain, though the joint was flexed by me to a considerable extent.

On the 26th the wound was re-dressed for a similar reason. Œdema of the thigh was still marked, and the skin browned by the antiseptic. All the stitches had suppurated, and were now removed; there was some ulceration round some of them. The line of incision, however, looked perfect. There was neither pain nor tenderness.

On December 13 she was able to sit up in bed without assistance, but could not sit up beyond a right angle, because of the œdematous condition of the front of the thigh. She was taken out of bed and allowed to walk on the floor; this she did with perfect movement, and a complete absence of pain. She was not afraid of doing it. There was some sero-purulent collection in the track of one suture. The splint was removed, and she was allowed to sit up.

December 28.—Child up, walking readily. The abdominal swelling was thoroughly examined under chloroform, the finger being introduced into the rectum and a sound into the bladder. It did not fluctuate. This examination was repeated at my request by those present. In a few days the swelling began to subside, and by December 4 had quite disappeared, and with it all symptoms of bladder affection. The abscess behind the right hip continued to discharge for about two months after it was opened, and during that time caused but slight inconvenience, no pain. The movements of both hip-joints were normal when she left the hospital on January 2 of this year. She had then put on flesh, and looked in good health.

In the early part of the summer she was readmitted to the hospital for a typical strumous abscess of the supra-condyloid gland of the right arm, when, although there was a sinus over the lowermost stitch-mark on the left side, she had no difficulty in walking and no pain. The granulation tissue removed from the cavity of the bone at the time of the operation was examined microscopically, and some of it is under the microscope in the next room. It can hardly be said, however, that it presents much in favour of my opinion that the disease of the bone was tubercular, though it says nothing against that view. I do not think that, regarding the case from a clinical standpoint, there will be much doubt in the minds of members of the Society that it was tubercular, more especially if the appearance of a fresh deposit of inflammatory character in the right thigh be considered.

The girl whose case is described above was exhibited to the Society on the same evening as the account was read, and her condition was then very satisfactory. As regards the

hips, she was able to walk normally, to climb up on a chair, putting the left foot on the seat of the chair to climb with; in fact, all the movements were perfect. The scars of the operations were evident, there was no abdominal swelling; behind the right thigh was a patch of induration, with some surface ulceration, of strumous character, about the size of a five-shilling piece, of three weeks' duration. The child was well nourished, active, and in excellent general health.

This case illustrates the advantage of early incision and examination in suppuration of the hip-joint.

Note.—The patient was again under my care in the December of 1890 with a carious condition of the upper and anterior surface of the left femur, which corresponded to the lower end of the old incision, and did not heal until the bone had been scraped and chloride of zinc applied. The movements of the joints continued perfect.

II.—*A case of Sudden and Fatal Dyspnœa due to a bronchial gland which had ulcerated into the trachea, in a child æt.* 12 *months.* By Robert William Parker. *Read October* 10, 1890.

Martha B., æt. 12 months, a well-developed and well-nourished infant, was admitted into the East London Children's Hospital on February 18, 1890. Her mother stated that while in a butcher's shop buying something for her husband's dinner the child, which she was carrying in her arms, was seized with sudden and urgent dyspnœa. As far as the mother could judge the child was quite healthy when she left home; it had nothing in its mouth or hand just previously to the onset of the dyspnœa, and had not recently been fed.

On its admission Mr. Baker, the house-surgeon, noted that the child was slightly livid, and that there was inspiratory dyspnœa, with some recession of the lower parts of the anterior and lateral parts of the chest-wall; there was no stridor. On examining the pharynx, some frothy mucus was seen, but otherwise nothing abnormal, nor could anything be detected with the finger to account for the dyspnœa. A hot bath failed to give any relief. About ten minutes later, the dyspnœa, lividity, and recession of chest-wall had greatly increased, so the mother was informed of the child's dangerous condition, and her consent to an operation was asked. The mother, however, firmly declined to give this permission without first obtaining her husband's consent, and as he was at work in the immediate neighbourhood of the hospital she went off to fetch him. Meanwhile the dyspnœa became critically urgent, and tracheotomy was performed by Mr. Hastings, the resident medical officer, without waiting for the father's arrival or his consent thereto; the cyanosis and recession rapidly disappeared, and there was marked and immediate improvement in the child's general condition. A foreign body was not found, nor was any diphtheritic membrane got up, nor any satisfactory explanation for the dyspnœa discovered.

The relief, however, was of very short duration; within fifteen or twenty minutes the dyspnœa began again and became more urgent. A suction apparatus was passed into

the trachea, and efforts made to remove some foreign body, which was still looked upon as the cause of the trouble; but nothing could be extracted. It may here be stated that the parents of the child were now in the ward, and very greatly displeased that an operation had been performed without their consent; their presence and dismay at the evidently critical condition of their child materially hampered us in the search for the foreign body supposed to be present, and may, in a measure, account for our want of success. The child died in about an hour, that is to say within an hour and three quarters of the first onset of the dyspnœa.

A post-mortem examination was made by order of the coroner. The body was well nourished and well developed, and with the following exceptions all the organs were healthy. The pharynx, œsophagus, larynx, and trachea were removed together. On opening the trachea, just above the bifurcation, there was seen a rounded foreign body, as large, and much the same shape, as a white bean; on closer inspection this proved to be the remains of a softening caseous bronchial gland, which had passed into the trachea through a circular, clean-cut opening as large as a cedar pencil. The gland completely occluded the right bronchus, and the left one partially; it was held *in situ* by a pedicle about half an inch long, which appeared to be the dilated, thickened, and now partially emptied capsule of the gland; there were several other caseous glands in its neighbourhood. Nearly the whole of the upper lobe of the right lung was in a state of tubercular consolidation, undergoing degeneration; the lungs, with the exception of being collapsed in places, were otherwise healthy.

Remarks.—The sudden onset of urgent dyspnœa in so young and apparently healthy a child would most naturally be explained by the supposition that a foreign body had accidentally reached the larynx or trachea. In the present case this diagnosis was given, notwithstanding that the patient, an infant in arms, had no foreign body, either food or playthings, within its reach. There were no inflammatory manifestations in the pharynx, nor could anything be detected by the finger. The post-mortem examination, however, confirmed the diagnosis, though in an entirely unexpected sense. It is remarkable that there were no clinical evidences indicating that ulceration was taking place into the trachea. Among symptoms that might have been expected, and which have from time to time been recorded in connection with ulceration into the trachea, may be mentioned—alterations in the voice, either

hoarseness or aphonia; respiratory difficulties, due apparently to reflex spasm of the glottis, leading to dyspnœa in some cases, and in others to conditions not unlike asthma. A troublesome cough, too, has been recorded as frequently present in such cases, sometimes associated with purulent expectoration. The absence of expectoration in this present case must not be made too much of, for infants rarely expectorate even when the lungs are extensively implicated. Enlarged bronchial glands are, by some observers, thought to be productive of a spasmodic cough not unlike whooping-cough—"toux coqueluchoïde," as it has been termed; but in this case nothing of the kind had been remarked. On subsequent inquiry of the mother it was stated that the child had been treated for bronchitis about three months previously, but was thought to have quite recovered.

The *ensemble* of the symptoms is, I think, very unusual, not to say unique. Notwithstanding that many cases have been recorded, and that many more cases have probably gone unrecorded, ulceration into the air-passages must be regarded as comparatively rare, considering how often diseased glands undergoing destructive changes are found in this region. When ulceration does occur, the more common lesion is perforation of one or other bronchus; even then it is quite exceptional for the diseased gland to make its way bodily into the bronchus. Compression from enlarged glands also occurs in some cases;* but here again the bronchi suffer more frequently than the trachea. In nearly all the recorded cases the patients have been much older than was mine.

During the operation of tracheotomy, the absence of the laryngeal excursions, so usual in diphtheria, and some other conditions in which the obstruction lies in the larynx, was noted.

Appendix.

The following cases, more or less resembling my own, have recently been recorded, for references to which I am indebted to Dr. Neale's Digest and Appendix (sect. 634, 1).

Dr. Wynn Westcott records the case of L. F. W., a plump, healthy-looking child, æt. 3, who was placed by his mother on a stool near the fire to finish a cup of bread and milk, which had been prepared for a baby. The child began to eat the

* For an interesting case, see Mr. Makins's Report in *Pathological Transactions*, vol. xxxv, 1884, p. 79.

food with a teaspoon, and the mother left the room; within a minute she heard the child cry out. She rushed back into the room, and seeing the child had become black in the face, she snatched her up and ran with her to the shop of a chemist close by. But life proved to be extinct. At the post-mortem examination the lungs were found healthy, with the exception of a patch of recent miliary tubercles at the left apex. Several bronchial glands were found to be much enlarged and filled with caseous matter. On opening the larynx and trachea, a solid yellowish mass, of the size of a white haricot bean, was found impacted in the glottis; another similar mass was found lying in the trachea. Just above the bifurcation of the windpipe, and on its right side, was an ulcerated opening half an inch long and a quarter of an inch in width; this communicated with the cavity of a diseased bronchial gland as large as a walnut. Attention is specially drawn to the fact that there had been no symptoms during life, and that the child was well nourished.*

Dr. Percy Kidd reported to the Pathological Society (February 17, 1885) the case of a boy, æt. 7, who had had a croupy cough and stridulous breathing during life. One night, after having played about as usual during the daytime without experiencing any urgent symptoms, he suddenly woke up screaming, coughing, and struggling for breath. He died in about ten minutes. At the necropsy the mediastinal glands were all enlarged and caseous. The lower end of the trachea was blocked by an oval, partially softened, caseous gland, which had been extruded through an ulcerated opening in the anterior wall of the trachea just above the origin of the left bronchus.

Dr. Goodhart said he had seen a similar case in a child, æt. 2½, who had had attacks of dyspnœa occasionally for six months, and who died suddenly in a fit, choked. The necropsy revealed a caseous condition of the mediastinal glands, and a gland had ulcerated into the trachea just above the bifurcation of the bronchi and plugged it. He believed he knew of a second case, but a necropsy was not made.†

Helen M., æt. 12, on the morning of her decease, complained of soreness of the throat, for which her parents consulted Dr. Tait. On examination he found marked difficulty in breathing, and expressed the opinion that inflammatory croup was setting in. The girl shortly afterwards was seized

* *Brit. Med. Journ.*, vol. i, 1881, p. 386.
† *Brit. Med. Journ.*, vol. i, 1885, p. 435.

with distressing dyspnœa, which proved fatal in about a quarter of an hour. At the post-mortem examination it was found that a tubercular abscess had formed in the mediastinal lymphatic glands, and that this had ulcerated into the trachea about half an inch above the orifice of the left bronchus. Through the opening, which admitted the tip of the fore-finger, a quantity of cheesy matter had escaped into the trachea, which was almost completely blocked.*

Under the care of Dr. Ord a healthy-looking boy, æt. 5, was admitted into St. Thomas's Hospital at 7 A.M. on November 29, 1888, suffering from great dyspnœa, lividity, and cough of four days' duration. According to the parents he had coughed up a thick piece of phlegm the preceding night. Rhonchi were heard over both lungs. An emetic was given, and at 10 A.M. the child seemed fairly well. He continued well until December 9, when he was discharged. During his stay in the hospital his temperature rose, once to 104° F. and at other times to 102° F., for no apparent reason. On December 18 he was readmitted suffering from still greater dyspnœa, especially well marked on expiration. Rhonchi were heard over both lungs, and the child was in very great distress. Stimulants and expectorants were administered, but he died on the 19th, at 2 A.M. At the post-mortem examination both lungs were found collapsed. In the trachea, just above its bifurcation and springing from the right side, was a caseating gland which had ulcerated through its walls and almost completely blocked it. A few more caseating glands were found round the trachea and bronchi, but none elsewhere. The gland was attached by firm adhesions to the margin of the opening into the trachea, the smaller part of its substance being outside, but continuous with that which had made its way through. This is a very rare condition; . . . it is more common to find caseating abscess cavities communicating with the large air-tubes.†

Dr. Loeb (Frankfort) reports the case of a well-developed and well-nourished boy, æt. 4, whom he found suffering from urgent dyspnœa, with cyanosed face, blue lips, and cold extremities. The boy's mother stated that half an hour previously he seemed quite lively. He had had some cough and expectoration for about three weeks, and had been kept in his room for the past week, but it had not been thought necessary to have the attendance of a doctor. The dyspnœa could not

* *Lancet*, vol. ii, 1885.
† *Lancet*, vol. i, 1889, p. 37.

DESCRIPTION OF PLATE I.

To illustrate Mr. Parker's case of Sudden and Fatal Dyspnœa.

FIG. 1 shows the spot at which the bronchial gland penetrated the trachea.

FIG. 2 shows the pedicle, consisting of thickened capsule, which more or less fixed the gland and prevented its removal.

Fig. 1

Fig. 2

A. Danielsson, del.

Danielsson & Co. lith.

be relieved, and the boy died within an hour of its commencement. The post-mortem examination revealed chronic tubercular lesions in the lungs, pleura, liver, and spleen. On opening the trachea a caseous mass 2½ cm. long, 1 cm. broad, and ·7 cm. thick, was found wedged in the trachea. The sequence of events seems to have been caseation of a bronchial gland with softening and necrosis, rupture into the right main bronchus, escape of the sequestrum, and its impaction in the trachea.

This author gives a second case, a table of collected cases, and a number of references to the subject of ulceration of the glands into the bronchi, &c.*

* 1886, *Jahrbuch für Kinderheilkunde*, vol. xxiv, pt. 3.

III.—*A case of Excision of the acromial half of the Clavicle for myeloid tumour.* By J. Bland Sutton. *Read October* 10, 1890.

Annie F., æt. 26, came under my care for a swelling involving the acromial end of the right clavicle, with the following history:—In August, 1889, she noticed a small lump on the collar-bone which slowly increased in size. The following February the tumour was as big as a walnut. In this month (February) she was confined; whilst nursing the baby the tumour increased in size more rapidly, and caused her to seek advice of Dr. Arthur Wyborn in March. Shortly afterwards Dr. Wyborn transferred the patient to me.

In April the swelling was as large as a Tangerine orange, and involved the outer end of the clavicle. I could not decide whether the tumour was a sarcoma or a gumma; although there was not the least evidence in the history in favour of the latter supposition, I thought it right to submit the patient to a course of iodide of potassium in mild doses for a few weeks. She was also advised to at once wean the baby.

Towards the end of May it was clear that the tumour was growing, and egg-shell crackling could be made out over its posterior aspect. She was admitted into the Middlesex Hospital June 3, 1890. The tumour now gave rise to dull aching pain, which was considerably increased by pressure. The skin could be freely moved over the swelling, the surrounding tissues were uninvolved and no large glands detectable.

On June 5 I explored the swelling with the intention of removing the whole clavicle if the tumour should turn out to be a peripheral sarcoma, but if a myeloid tumour to be content with removing the outer half only. On cutting into the swelling it was at once seen to be a myeloid tumour. The clavicle was then sawn through at its middle, and the outer half excised. No difficulty was experienced; my colleague, Mr. Andrew Clarke, kindly assisted me and picked up the vessels as they were divided, for the arterial twigs in the periosteum had become much enlarged to supply the tumour, which was very vascular. Over the coracoid process the bony capsule was tightly bound down by the coraco-clavicular ligaments; these were carefully snipped through with scissors.

The only important structure seen was the supra-scapular nerve, which ran in a shallow groove in the capsule of the tumour. This I was able to reflect without injury. The operation occupied half an hour. The subsequent course was uneventful. The wound slowly suppurated, and in the course of twenty-eight days the woman left the hospital with a granulating wound an inch and a half long. This was kept from closing in consequence of the tension exerted by the trapezius on the posterior edge of the wound. In the course of a few weeks the wound had soundly healed, and the patient is able to move her arm without pain or inconvenience.

I was induced to practise partial resection rather than excision of the whole clavicle in consequence of the admirable results obtained by Mr. Henry Morris in the instance recorded in vol. x of the Society's *Transactions,* in which he excised the lower end of the radius for a myeloid tumour. That ope-

FIG. 1.—Myeloid tumour of the acromial end of the clavicle, nearly natural size.

ration was performed in 1876, and the woman remains free from any recurrence. I hope my patient will enjoy the same immunity.

I made a careful microscopical examination of the tumour, and found it a typical example of myeloid tumour. We must be particular in recording cases of partial excision of bones for supposed myeloid growths, for many central sarcomata of bone mimic myeloid tumours. If a central sarcoma be excised

and recurrence occur, discredit will be cast upon one of the most conservative of surgical operations.

The present case is exceptional in that it is the only example of myeloid tumour of the *acromial* end of the clavicle I can find in modern surgical literature Mr. Bowreman Jessett recently collected the cases of sarcoma of the clavicle scattered in periodical literature (*Lancet*, June, 1889). Out of ten cases in which the situation of the tumour is given, eight occurred at the sternal end and two in the middle of the bone.

IV.—*A case of severe Traumatic Sciatica successfully treated by the removal of a spiculum of bone from the edge of the great sacro-sciatic foramen.* By J. Bland Sutton. *Read October* 10, 1890.

WILLIAM H., æt. 43, was brought to me by Dr. G. D. Becher for severe sciatica. The patient gave the following history:

He was chief mate of a sailing-vessel. On December 9, 1889, soon after leaving St. Vincent, a "derrick-boom" fell upon him, dislocated the head of the left femur, and severely bruised the leg. There was no doctor on board, and as the man suffered severe pain the captain made an attempt to reduce the dislocation. The patient, after taking "half a bottle of brandy and fifty drops of laudanum," was fastened by means of a perineal band to a ring-bolt on the deck. Ten seamen then hauled at the leg under the superintendence of the captain. (The result was unsatisfactory, and seems to have converted a dorsal dislocation into a dislocation into the great sciatic notch, as far as can be judged from the patient's description.) Four days later the ship arrived at the Canary Islands, and the man was admitted into St. Mark's Hospital, and the dislocation reduced under chloroform. He still suffered great pain in the buttock, and to relieve this the actual cautery was applied in the course of the sciatic nerve near the lower border of the gluteus maximus. This had no useful effect, and for the last six months the pain has been so severe as to prevent walking, extension of the leg being especially painful.

In describing the pain the patient states that it passes down the back of his thigh to the knee-joint and divides; "one stream of painful sensations" runs along the back, and the other along the front of the leg to the toes.

With these facts before me I unhesitatingly recommended an exploration of the nerve at the spot where it issues from the great sciatic foramen. This was carried out a few days later (May 28, 1890). The patient was put into the position of a body about to have the gluteal region dissected, and Dr. Sheppard, who administered the anæsthetic, stated that it in no way rendered the administration dangerous, or even

anxious, whilst it facilitated in a marked way the steps of the operation. The great sciatic nerve was easily exposed, and followed up by means of the finger to the foramen. Here an irregular piece of bone was felt at the margin of the sciatic notch, and on the outer side of, but close beside the nerve. The lower fibres of the gluteus maximus were now divided, and the point where the great sciatic nerve issues from the pelvis clearly exposed by means of retractors.

FIG. 2.—The spiculum represented of natural size.

It was then seen that a spicule of bone, 15 mm. in length, protruded from the ischial margin of the great sciatic notch. The point of this bony spiculum projected immediately over the nerve in such a way that whenever the leg was extended its apex pricked the nerve. This was easily demonstrated by extending the limb. This spiculum was nipped off with bone forceps, and is represented of natural size in the accompanying sketch (Fig. 2). The cut edges of the gluteus maximus were united by gut sutures, and then the skin edges brought together in the usual way. A drainage-tube was inserted in front of the gluteus maximus, and another between the muscle and skin. The patient lost the pain, and left the hospital well twenty-one days after the operation.

The abnormal spiculum of bone which gave rise to all this disturbance was, I believe, due to fracture of the acetabulum and adjacent portions of the ischium, which resulted from the original injury, or possibly from the rough attempts made by the sailors to reduce the dislocation.

V.—*A case of Mixed Enchondroma of submaxillary gland.* By W. Arbuthnot Lane, M.B., M.S. *Read October* 24, 1890.

J. S., æt. 36, male, was admitted into Guy's Hospital under my care on March 20, 1890. Four years ago he for the first time noticed the presence of a hard lump below the body of the jaw on the left side. It was at first about as big as a hazel nut. Since that time it had gradually increased in size. A large elongated mass extended from outside the middle line, where it was deeply placed to a point below and a little behind the angle of the lower jaw, where it was placed more superficially. It had a very nodulated outline, so much so as to give it the appearance of two separate growths, except for the fact that the whole mass moved together. It felt firm and elastic in consistence.

On March 25 the mass was removed. Its anterior portion was deeply placed, extending forward beneath the mylo-hyoid muscle. Around the anterior half of the growth the submaxillary gland was wrapped, and had to be carefully removed from it. The gland was also connected firmly with the whole of its deeper aspect. The growth had no connection or relation with the parotid gland, from which it was separated by a considerable interval. It was ovate in form, firm and cartilaginous in structure, and in some parts more or less calcified. Its surface presented numerous rounded elevations. It possessed a distinct capsule, of which only a portion was removed. The man recovered quickly, the wound healing by primary union.

Microscopically the large bulk of the tumour was seen to be made up of cartilage arranged in the form of nodules or irregular masses. In the intervals there was some glandular material in various stages of development, some of the alveoli possessing an epithelial lining and a distinct lumen. There was also a very small quantity of myxomatous tissue and some fibrous tissue.

My object in bringing this case before the Society is to

obtain the experience of others as to the supposed rarity of this condition.

Since reading this paper I have removed a precisely similar growth from the submaxillary gland of a woman.

VI. — *A case of Tubercular Peritonitis and double pleurisy, ending in recovery.* By DAVID W. FINLAY, M.D. *Read October* 24, 1890.

C. F. B., æt. 17, by occupation a barman, came under my care in the Middlesex Hospital on October 26, 1888.

Family history.—The father is living and healthy, æt. 48, the mother also living, æt. 41. She suffers from chronic cough. Eight sisters and one brother are alive and healthy, one brother died of "bronchitis," and another in infancy from some unknown cause. There is a history of consumption in some relatives on the mother's side, but the patient has no definite knowledge on the matter.

Personal history.—He had whooping-cough at the age of three, and his father states that he had then a little ascites, which soon passed off. He has been otherwise healthy, and he has always been a sober lad.

Present illness.—Nine days ago he began to suffer from abdominal pain and swelling. The pain was most felt in the lower half of the abdomen; it was not severe, but paroxysmal and rather increased by pressure. Since the date of attack the pain has become less, and the swelling more marked; the appetite has been fair, and the bowels, constipated for two two days at the onset of the illness, have since become relaxed.

State on admission.—He is described as a well-nourished lad of fairly healthy appearance; his pulse 120, full and regular, temperature 100° F., respirations 24. His tongue is rather dry, and coated down the centre with a light brown fur. The abdomen is markedly swollen, measuring 36 inches in girth at the level of the umbilicus. The superficial veins are marked, the flanks bulge considerably, and there is slight tenderness in the epigastric and lumbar regions. On percussion the epigastric and umbilical regions are tympanitic, marked dulness, shifting with change of position, is found elsewhere, and an ascitic wave is readily elicited. The area of liver dulness begins at fifth interspace in right nipple line, and passes below into the general abdominal dulness; the splenic area does not appear to be increased. In the chest

nothing abnormal is found except at the posterior bases, where from about the eighth rib downwards on the left side and the tenth on the right percussion resonance is impaired, vocal fremitus diminished, and breath-sounds are scarcely heard. At the line of commencing dulness on the left side faint friction-sound is audible.

The heart's impulse is felt rather diffusely over fourth and fifth interspaces within the nipple line; both sounds are clear, the first somewhat prolonged. There is no swelling or tenderness within the scrotum: the urine is acid, with a specific gravity of 1028; shows a thick deposit of pink lithates, and is free from albumen.

Three days later the girth at the umbilicus was found to be 37 inches, an increase of 1 inch.

On November 2 he complained of sharp pain in the lower part of the left side of the chest, especially on deep breathing, and on examination coarse friction-sound was heard and friction fremitus felt in the neighbourhood of the angle of the left scapula. The patient appeared to be emaciating, and he had been sweating freely. Breath-sounds and vocal fremitus were lost at both bases. His weight at this time was 11 st. 10 lbs., and the girth of the abdomen had increased to 38 inches; the temperature was 103·2°, having ranged during the preceding eight days between 99·2° and 102·6° F.

During the following week the girth of abdomen became less by half an inch, and the temperature averaged about a degree and a half lower, but the dulness at left base increased and the friction was heard at a somewhat higher level. Just inside the angle of the left scapula there was a small area where the breath-sounds were blowing in character. He had lost 2 lbs. in weight.

After the lapse of another week he had lost 8 lbs. more, and the effusion into the left pleura was found to have gradually increased, dulness behind rising to the spine of the scapula and in front to the level of the second rib. On auscultation in front over the dull area bronchial breathing was heard, and similar breath-sounds were audible over the middle of the left back. At the same time the heart's maximum impulse had come over close to the left border of the sternum in the fifth interspace.

As to the abdomen there was no change except that it could be freely manipulated without causing pain. The girth was still 37½ in., and signs of ascites were well-marked. About this time he was troubled a good deal with sweating at night.

The amount of ascites, however, soon began to diminish, the girth at umbilicus, which had been 37½ inches on November 13, had declined to 34¼ on the 20th, and 32½ on the 23rd. The temperature also at the latter date was noted to have been normal or subnormal, with only one exception, for several days. His weight showed a further loss of 9½ lbs.

On November 30 the ascites had disappeared altogether, slight pain, however, being complained of in the left iliac region, and the area of liver dulness was then found to be normal. The pleural effusion also was much diminished, the dulness over left front reaching only to fourth rib, and behind to about an inch above the angle of the scapula; it had almost disappeared from the right side. The heart's maximum impulse was now found midway between the nipple line and the left border of the sternum. With the diminution of the effusion coarse friction-sounds were heard over the lower half of the left chest, but these soon cleared up, and he continued to make steady progress in convalescence. He had gained 12 lbs. in weight from the lowest point touched.

On January 30, 1889, he was sent to a seaside convalescent home, the following note having been made as to the condition of the abdomen: "Abdomen is moderately flaccid and not obviously distended; resonance is somewhat impaired below the level of the umbilicus, especially on the left side. There is a diffused sense of resistance on palpation over the lower half of the abdomen, suggesting matting together of the intestines, and in addition masses of rather more defined character are felt in the upper umbilical and iliac regions on the left, and in the lower umbilical region on the right side. The urine is normal.

After three weeks residence at the seaside he returned to his work, and he presented himself at the hospital for examination on March 13. His state then was as follows: Abdomen flat and flaccid, presenting no evidence of fluid; resonance for the most part somewhat impaired, although islets of resonance were met with in the neighbourhood of the umbilicus. The lumpy masses below umbilicus on right side and above it on left were felt as on discharge but rather less plainly; that in left iliac fossa had disappeared.

As for the chest there was slight impairment of resonance for about a couple of inches at both posterior bases, and the breath-sounds were here weak; elsewhere there was good resonance and good breathing, free from adventitious sounds. The heart's impulse was forcible, and of maximum intensity

in the parasternal line in fourth and fifth interspaces, the sounds being loud and rather rough.

There was no cough or trouble with the breathing, and no night-sweats; his bowels were regular, his appetite good, and he had gained ten pounds in weight since his discharge from the hospital. He complained only of occasional slight abdominal pain when at work.

He wrote to me in January of this year, "I have been at work all last year and have felt no ill-effects." I have been unable to see him since then.

Remarks.—I think there will be no difference of opinion as to the diagnosis in the case just related. The whole course of the illness, and especially the involvement of the pleuræ, together with the condition of the abdomen during convalescence, seem to me to point to tubercle, and nothing else. It was, indeed, suggested that the ascites might be due to hepatic cirrhosis, but beyond the slender fact that the lad was occupied as a barman, and so had, presumably, free access to alcoholic liquids, there was nothing to justify such a conclusion. Nor must it be thought that the reference to recovery in the title which I have given to the case is intended to indicate anything unusual or wonderful. My object in bringing it forward is, indeed, quite different, namely to accentuate the fact that recovery from tubercular peritonitis is much more frequent than has been commonly thought, especially by the older writers.

It may not be uninteresting to quote a few of the statements made in medical works on this point.

Sir Thomas Watson says:* "These are very unpromising forms of disease, and it is seldom that we can do more than mitigate the most distressing of the symptoms, or retard, perhaps, the march of the disorder. . . . Do what we may, in nine cases out of ten our best directed efforts will be disappointed."

The writer in Ziemssen's† work expresses himself thus: "Tubercular peritonitis leads almost always to death. The cases which are recorded of recovery permit of a justifiable doubt as to the correctness of the diagnosis. The prognosis must be regarded as absolutely fatal."

Aitken‡ writes: "Neither will the patient likely recover if the peritonitis is caused by subperitoneal tubercles."

* *Principles and Practice of Physic*, 5th ed., vol. ii, p. 438, 1871.
† *Cyclopædia of the Practice of Medicine* (Bauer), vol. viii, p. 334, 1878.
‡ *Science and Practice of Medicine*, vol. ii, p. 813, 7th ed., 1880.

Writing more recently, Roberts* says: "Tubercular peritonitis may certainly be recovered from;" and Fagge†, more hopeful still, that "the disease has by no means so decided a tendency to terminate fatally as might be supposed."

Bristowe‡ says: "Tubercular peritonitis tends as a rule to a fatal result. Apparent recovery, however, is not uncommon, and there is great reason to believe that it is occasionally permanent."

Taylor§ states that "the prognosis is, of course, unfavourable, but many patients treated early have apparently recovered completely."

The only statistics which I am able at present to produce are those of the Middlesex Hospital for the eight years 1880 to 1887 inclusive. During this period thirty-five cases of tubercular peritonitis were under treatment, of which nineteen were discharged "recovered or relieved." Fifteen died, and one was discharged at his own request. I have not had an opportunity to look up each individual case, and cannot say what might be the amount of relief in those cases which could not be described as having recovered, but even after making a large allowance here, the immediate prognosis, at least, would appear to be much better than it has been stated to be, even by the least unfavourable of the writers before referred to.

As regards the present case, an additional interest may be thought to attach to it from the fact recorded in the history, as given by the lad's father, that he had an attack of ascites when three years of age. If this was a correct observation, it is quite possible that he had a first attack of peritoneal tuberculosis at that time, so that he may have recovered from the disease twice.

I must not omit to refer in conclusion to an admirable paper on tubercular peritonitis by Dr. William Osler‖, of Johns Hopkins University, which reached me while I was engaged in preparing this case for the Society. He takes much the same view as I have put forward, stating that "the evidence has been rapidly accumulating to show that in a considerable number of cases recovery in this disease is possible."

I have said nothing about treatment, because I do not suppose it had much to do (so far as drugs at least are con-

* *Quain's Dictionary of Medicine*, p. 1142, 1882.
† *Principles and Practice of Medicine*, vol. ii, p. 477, 2nd ed., 1888.
‡ *A Treatise on the Theory and Practice of Medicine*, p. 708, 7th ed., 1890.
§ *The Practice of Medicine*, p. 636, 1890.
‖ *Johns Hopkins Hospital Reports*, vol. ii, No. 2, p. 27, Baltimore, 1890.

cerned) with the favourable result of the case. Such as it was, it consisted in the administration of quinine in an effervescing mixture for a few days at first, followed by hypophosphite of calcium with syrup of the phosphate of iron, and blisters applied to the chest.

VII.—*A case of Aneurism of the Arch of the Aorta for which the left common carotid was tied.* By H. Elwin Harris, M.B. *Read November* 14, 1890.

J. M., æt. 38, a carpenter, was admitted into the infirmary, St. George's-in-the-East on January 23, 1890, complaining of a painful swelling in the upper part of the left side of his chest.

His family history was good, and the patient had suffered from no previous illness, excepting syphilis sixteen years ago, and occasionally rheumatic pains. He described his present illness as of six weeks' duration, during which time he had suffered from a constant aching pain in nape of neck and left shoulder-joint, with an occasional hacking cough and shortness of breath. Three weeks later he felt a throbbing sensation in upper part of chest, and noticed for the first time that there was a swelling at the upper and left side of the breast-bone, which he said gradually increased in size until his admission.

On admission he was anæmic but fairly well nourished, his voice was somewhat husky. On examining his chest a pulsating tumour was readily recognised at upper part of chest, causing the left manubrium adjoining costal cartilages and inner end of clavicle to bulge forwards, the tumour projected upwards into the root of the neck just above the level of the clavicle. Pulsation was distinctly seen, and was expansile in character. The lungs were resonant, except over seat of swelling; there were a few moist sounds to be heard on auscultation. Respirations were quiet and natural. *Heart* natural, as far as could be made out. The *pulses* on the two sides were distinctly unequal, the left being much the smaller. *Pupils* equal. *Urine*, no albumen.

As may be gathered the diagnosis was easily made, and it was evident that the patient had a large aneurism of the second part of the arch of the aorta.

The course of treatment which was first adopted was that of perfect rest in bed and low diet; the diet upon which he was placed was as follows:

Breakfast	Bread and butter . .	℥iij.
	Milk	℥vij.

Dinner	Beef or mutton . . .	℥iij.
	Pototoes	℥ij.
	Claret	℥v.

Tea—Same as breakfast.

Nine ounces of solid food, and nineteen of fluid.

This treatment was continued for five weeks with little success, as the following note on March 5 will show: "Aneurism markedly increasing in size, chiefly in an upward direction above the clavicle and also above the sternal notch; cough is much more troublesome, expectoration profuse; dyspnœa urgent occasionally, breathing during sleep is hard and sonorous; there is also some difficulty in swallowing."

Three days later he was seen by Mr. Christopher Heath, who recommended the low diet to be replaced by a liberal one, and advised ligature of the left carotid.

The patient readily consented to the operation, and Mr. Heath performed it on March 13, ligaturing the artery with (?) stout silk ligature. The only anæsthetic used at the operation being the outward application of a 20 per cent. solution of cocaine and 1 grain injected subcutaneously.

Speaking generally after the operation the patient's condition was not improved, he became most restless and extremely irritable, and was only soothed by hypodermic injections of morphia, for which after the first injection he developed a persistent craving. The aneurism itself, however, for nearly a fortnight after the operation apparently decreased in size, but this improvement was only temporary. The wound was soundly healed on the fifteenth day.

On April 12, a month after the operation, I noted that there was a marked enlargement of the aneurism in every direction, the left clavicle bulged forward considerably, and the swelling over the sterno-clavicular notch was much more prominent.

After this date the patient gradually became worse, his cough and expectoration were more distressing and dysphagia increased; he became rapidly emaciated, and eventually died from syncope on May 12, just two months after the operation.

A *post-mortem* examination was made, when the contents of the thorax were removed bodily and taken to the College of Surgeons, where the aneurism was carefully dissected. I was thus enabled, with the kind assistance of Mr. Frederick Eve, to make the following accurate description of it and its relations. It sprang from the upper and anterior part of the

transverse portion of the arch, with which the tumour communicated by a rounded opening, measuring $1\frac{1}{8}$ in. in its transverse diameter; the proximal margin of the opening was 2 in. from the aortic orifice, the upper extending as high as the orifices of the large arterial trunks, the lower being slightly above the level of the floor of the arch.

The aneurismal sac projected chiefly upwards and to the left; its summit was $1\frac{3}{4}$ in. above the sternal notch; downwards and to the left it had encroached upon the pleural cavity, and a portion of lung was adherent to its inferior surface. On the right side it had extended somewhat beyond the sterno-clavicular articulation, and had eroded the sternal end of the clavicle, its walls were intact, except at this point and where it infringed upon the manubrium sterni and left clavicle; they were formed to a large extent of condensed connective tissue.

The sac was entirely filled with clot, of which the outer layer for $\frac{3}{4}$ to 1 in. in thickness was composed of decolorised laminated fibrin, whilst the central portion was made up of ordinary red coagulum.

From the orifice of the aneurism clots extended in a radiate fashion upwards and downwards into the aorta and the innominate and left subclavian arteries, in which they tail off in a thread-like manner. This clot after being subjected to the action of weak spirit was firm and its surface smooth, and separated like a membrane from the body of the clot; a section of the clot was fleshy and of firm consistence, and nearer the orifice of the aneurism, slight pressure caused it to split up into laminæ.

Just above the aortic orifice the clot was distinctly adherent over a surface nearly an inch in length on the concavity of the arch, which was here much roughened from calcareous degeneration.

The aorta was generally atheromatous with calcareous patches, but for the most part fairly smooth.

The ligature had been applied to the left carotid $\frac{3}{8}$ in. below the bifurcation; here the artery was interrupted for about $\frac{1}{2}$ in. by a mass of fibrous tissue; above the artery was completely filled by an organised but still coloured clot; below, a completely decolorised clot extended along the posterior wall of the vessel, to which it was firmly adherent; this clot ceased an inch and a quarter above the commencement of the artery, with the exception of an exceedingly fine filament, which was continuous with the clot in the aneurism; this clot occupying the proximal portion of the carotid did not

nearly occlude the vessel. The remains of a ligature were observed embedded in the fibrous tissue.

The internal jugular vein coursed over the left wall of the aneurism, where it was completely obliterated by pressure.

The pneumogastric nerve was entangled in the new formation of connective tissue around the ligature.

The throat was natural, and there was no indication of pressure upon the trachea.

It is to be noted in this case that the aneurism at death was full of clot, and mostly laminated clot; in fact, it appeared that the man had died when the aneurism was cured. The form of the aneurism was conducive to coagulation, because of its extensive sac but small orifice.

In searching for similar cases to the one I have described it is somewhat surprising how seldom the left carotid has been tied for aneurism of the arch of the aorta during recent years. Mr. Holmes, in his Lectures on Aneurism delivered before the College of Surgeons in 1872, mentions seven cases; but since that date I have only found two on record, one in the *Transactions* of this Society, vol. ix, 1876, a case in which the left carotid was ligatured by Mr. Holmes, and the other in the *Bull. Soc. Anat. de Paris*, vol. lvi, 1881, by Dauchez. Of the seven cases tabulated by Mr. Holmes four were successful, but he remarks that all excepting one derived benefit from the operation. Mr. Holmes' case, to which I have referred, was much improved by the operation, whilst in Dauchez's the tumour disappeared, but there was a recurrence after two years, which ended in the patient's death.

It would appear then that some benefit may be confidently expected from the operation of ligature of the left carotid in cases of aneurism of the arch, and the case I have related I do not consider was an exception. It is certain that he did not improve on the treatment by low diet and rest, to which he was subjected previous to the operation, and the aneurism was gradually enlarging. This progressive enlargement was undoubtedly checked by the operation for a time, although a very short time; whether this improvement would have continued for a longer period had it not been for the excessive irritability and restlessness of the patient, I am unable to say, but the persistent and obstinate manner in which he would frequently sit up in bed could not have been conducive to the welfare of the aneurism. The operation was productive of some good, but I think that the disease was too far advanced when it was performed to produce any permanent benefit, and I much regret that Mr. Heath did not see the case earlier.

VIII.—*A case of Tubercular Meningitis in a man past middle age, in whom no old tubercular focus was discovered.* By H. Charlton Bastian, M.D., F.R.S. *Read November* 14, 1890.

JOSEPH F., æt. 52, a brewer's drayman, was admitted into University College Hospital under my care on May 21, 1889. On admission the patient was in a condition of somnolence mixed with delirium.

History.—Last Saturday week (May 11th) patient got wet through, after which he complained of a pain in the back of his neck. The pain was very bad indeed, and continued during the whole of the next day, extending also at that time to the forehead. He remained in bed the whole of this day, and went to his work on the Monday feeling better. On the following day (14th) he wandered mentally whilst at work, so much that his employers sent him home. According to his wife he appeared to be "all right in his head" till the following Tuesday, when she brought him to the Hospital on account of his complaining much of headache. In the out-patient room he became slightly delirious again, and was at once admitted as an in-patient. He had had no fit at any time or fainting attack.

When young he had had a kick on the head by a horse, and was delirious for two or three weeks. Since that time he has been deaf in the right ear. No history of other illnesses.

He has not been in the habit of getting intoxicated, but being a brewer's drayman has always taken a good deal of beer, and has been troubled with morning sickness. He has always had plenty of food, but his occupation has exposed him much to wet and cold.

Present state.—Patient was brought to the Hospital this afternoon in a very weak state. His mind was wandering, and he was continually muttering and making noises; hands constantly moving restlessly. He is a powerfully built man; there is no undue visibility or tortuosity of the temporal arteries. No ptosis or strabismus. Conjunctivæ somewhat injected, and of a yellowish tint. Pupils small, equal, and do not react to light. No optic neuritis. The cheeks and nose are covered with minute varicosities. No œdema under eyes.

The mouth is slightly open; lips dry. In the neck there is no visible pulsation. Skin is moist and in good condition. Fingers slightly clubbed. No signs of wasting. Temp. 102·2° in the mouth at 5.30 P.M.

Nervous system.—He has not complained of headache, and has not vomited. There is considerable delirium of a muttering character, which at times becomes more violent and noisy. He seems exceedingly dull. For though he generally appears to hear what is said to him, he does not seem to apprehend its meaning. At other times, however, he seems to comprehend pretty quickly what is said; though often when told to do anything he begins to mutter and make noises, and grumbles at being disturbed. He appears to imagine that he is still driving his horses, and often speaks to them. During the night he makes a good deal of noise, shouting and repeating the words "All right" over and over again. Sometimes when talking he hangs on one word for a time, as if he had great difficulty in getting it out. He lies quite flat on his back; his eyes are generally wide open and roll from side to side, his head rolling with them. The motions of the hands consist of small quiet movements, *e. g.* just seizing the bedclothes, or smoothing them down, or moving his fingers over his chest. Sometimes he will lift the arm straight up and keep it there for a time, or he will move it as if conveying something to his mouth. There are occasionally slight flexion and extension movements of the feet. He sleeps badly. He has control over both bladder and rectum.

He appears to see quite well; there is no ptosis; and the pupils are small but equal, though they do not react to light. There is no stabismus or weakness of any ocular movement. No facial paralysis, except that perhaps the left angle of the mouth is slightly lower than the right. Tongue comes out straight. No turning of head or eyes to either side. There is no constant difference in limbs of two sides as regards flaccidity or rigidity. There are no twitchings. Knee-jerks are equal and not increased; ankle clonus absent; and plantar reflexes are normal.

Urine, sp. gr. 1020; it contains a trace of albumen (about $\frac{1}{12}$).

Heart-sounds are rather faint, apparently from overlapping of lung; no bruit at base or apex. Pulse 81, regular.

Respiratory system.—No cough or expectoration. Chest barrel-shaped, movements fair; note in front somewhat hyper-resonant; behind, at the bases, it is somewhat de-

ficient in resonance. Breath-sounds are normal except posteriorly at the bases, where there are some crepitant râles, possibly due to œdema.

Digestive system.—Patient takes his food fairly well. Bowels are very constipated, not having been opened for some days. Tongue somewhat furred. There has been no sickness recently, but previous to his illness he suffered for years from morning sickness. He was ordered spoon diet, also Ext. Jaborandi liq. ɱxx with Mist. Pot. Acet. ℥j 4tis Horis., and Potas. Brom. gr. xx, c̄ Chloral gr. x p.r.n.

May 24.—Yesterday stertorous breathing commenced and has since continued. This morning he appears more drowsy and sleepy, and is in fact almost in a condition of coma. The pulse is more rapid and weaker. He scarcely eats anything, and this morning Dr. Bastian ordered him some nutrient suppositories. He still moves his hands about, especially the right. Muttering continues. He lies for some time with his eyes closed; when they are open they are directed towards the right, but he is able to follow the finger to the left. Yesterday he took Pulv. Jalap Co. and Pot. Bitart., of each ℥ss.

May 25.—This morning the stertorous breathing has considerably diminished, but his general condition is not much improved. The left angle of the mouth is slightly lower than the right. He still moves his hands, and frequently moves his head from side to side. There are no twitchings.

May 27.—Stertorous breathing has disappeared. General condition remains much the same. He has passed his urine and motions under him since the 24th inst.

May 31.—Patient remains in much the same state. Yesterday morning he had an attack of dyspnœa, lasting for some time. Breathing occasionally rather stertorous. Pulse rapid and weak. He now takes food fairly well. The left pupil is not so small as the right.

June 2, 8.30 p.m.—Dyspnœa began an hour ago, and he is now breathing 60 per minute. Pulse very rapid (140) and irregular, scarcely to be felt. Left pupil now smaller than the right; both are insensitive to light. Both eyes are turned somewhat outward, conjunctivæ injected. No facial paralysis. Knee-jerks gone. Right arm more flaccid than left. Brandy and amyl nitrite were given without result, and death occurred at 1 A.M. on the following morning.

The temperature of this patient on admission was 101·2°, and thereafter it ranged daily between 99° and 101·4° up to May 29. On that day it reached 102·4°; on each of the

two following days it reached 102°; on June 2 by 11 A.M. it had reached 102·8°, at about which level it remained till 10 P.M., when it stood at 103·2°. By midnight it had fallen to 101·4°, whilst one hour later, at the time of death, it again stood at 103°.

Autopsy (ten hours after death).—Calvaria thicker and heavier than natural. Inner surface and diploe unduly vascular. Dura mater abnormally adherent and hypervascular; no trace of pus on outer surface. Considerable increase of subarachnoid fluid over the whole of vertex, the arachnoid itself being rather opaque. Numerous small opaque specks, about the size of pin's heads, are seen in the arachnoid, over the sulci, in different parts of the vertex. Over the posterior parietal region on the left side are two or three larger specks of a yellowish colour, whilst a patch of the same kind ($\frac{1}{8}$″ by $\frac{1}{4}$″) exists lower down, just above the Sylvian fissure. These are the only patches of real lymph to be seen over the vertex. The arachnoid at the base of the brain is simply thicker and more opaque than natural. In the neighbourhood of the anterior and middle cerebral arteries some small white specks are seen, and on opening the right Sylvian fissure the vessels and the pia mater are seen to be thickly covered with similar white specks. It is more difficult to open up the Sylvian fissure on the left side than on the right, as the two brain surfaces are found to be glued together by the thickened pia mater, containing here yellowish-white specks, and this thickened membrane is found to be continuous with the patch of inflammation before described just above the Sylvian fissure. On slicing the cerebral hemispheres nothing unnatural was found except in and about the lateral ventricles. These were seen to be somewhat dilated, and to contain an excess of blood-stained serum; their walls were softer than natural, and the fornix was diffluent.

Right lung thickly studded with minute grey granulations from base to apex; the lower lobe is also in its upper part œdematous, and in its lower half is semi-solid and friable, presenting an early stage of inflammation, with minute hæmorrhages here and there on its surface and in its interior.

Left lung is also densely packed with grey granulations from apex to base; the lung substance is likewise much congested throughout, and in some places it presents an early stage of pneumonia. No trace of old tubercle in either lung.

Heart and pericardium: no inflammation or grey granulotions to be seen about either. Mitral and aortic valves

rather thick and opaque, and muscular substance of left ventricle somewhat pale.

Spleen: Capsule slightly opaque and flecked with numerous opalescent spots. Section of dark claret colour, substance soft. An old infarct exists near upper end.

Liver: Of medium size, rather pale, flecked on surface with a moderate amount of grey granulations. The cut surface is also rather pale, and when examined with a lens is seen to be pretty thickly studded with grey granulations.

Kidneys: Both organs were of medium size, rather tough and sparsely flecked both on the surface and in their interior with grey granulations.

Intestines: A few small ulcers were found in the ileum, cæcum, and the upper part of the large intestines.

Testes: These organs were not examined post-mortem, but during life no swelling of them was detected, nor was the epididymis thickened.

Peritoneum free from tubercle. No old cheesy masses were found in any part of the body.

From many points of view this is an interesting case. Although, in my experience, it is not uncommon to find acute tuberculosis developing in young children in the absence of any discoverable focus of old tubercular disease I have never previously met with such a case in an adult patient at or beyond middle age. Yet here we had such a development occurring without assignable cause in a strongly-built man aged 52, in whom, after the most careful search, no old tubercular focus could be discovered.

Again, the case is remarkable on account of the enormous development of the miliary tubercle in the lungs, although there were no definite signs pointing to lung disease till a few days before the patient's death. I have very rarely seen, even in a young child, the lungs so densely packed with grey granulations as they were in this case.

Within the abdomen no tubercles were found in connection with the peritoneum, though they were more or less abundant in the liver and kidneys.

Clinically, as is so often the case, this general disease showed itself in the main by the presence of head symptoms. Here, too, they developed very rapidly, seeing that the man seems to have made no definite complaints, and that he pursued his ordinary occupation of a brewer's drayman up to May 11, when he got wet through. That day, and on the next, he

complained of pains in the back of the neck and in the forehead, whilst within three days from the onset of the pain he showed signs of mental confusion and was sent home by his employers.

When he first came under observation it was a somewhat puzzling case, from the point of view of etiology and diagnosis. Although there was deafness on one side, there was no evidence of suppurative ear disease, and there was no history of a recent blow or fall upon the head. There was, further, no evidence for supposing the pre-existence of syphilis, and there was no heart disease that could have caused multiple embolisms of the cerebral meninges. Although, therefore, the diagnosis of meningitis was soon arrived at, its cause remained entirely obscure, seeing that the man presented no signs whatever of a phthisical malady, nor evidence of tubercle in any part of the body. These obscurities, together with the absence of any optic neuritis, gave rise, at first, to the supposition that the patient's symptoms might be due to a slight uræmic poisoning. Further examination of the urine soon, however, negatived this possibility.

At the autopsy the amount of inflammation of the meninges was found to be comparatively small, and to be most marked on the left side along the course of the middle cerebral artery. Again, owing doubtless to the man's age, slight wasting of the brain had already set in, so that in place of dry membranes and compressed convolutions, there was rather a distinct excess of subarachnoid fluid, and an absence of all signs of increased pressure. To this latter fact, together with the slightness of the basal inflammation, we may probably attribute the absence of optic neuritis.

IX.—*A case of Tumor Cerebri, with incipient tubercular meningitis.* By H. Charlton Bastian, M.D., F.R.S. *Read November* 14, 1890.

Walter R., æt. 43, a gardener, was admitted under my care into the National Hospital for the Paralysed and Epileptic on March 17, 1890.

History.—His illness began four months ago with pains in the head, and thickness of speech at times. He had no paralysis, no vomiting, and did not complain of his sight. When he came to the hospital as an out-patient on February 10, 1890, he complained of pain in the left side of the head, with tenderness over the left supra-orbital region. Felt weak. Pupils reacted naturally, and there was nothing abnormal in the fundus. On March 17 a note was made on his case paper that four days previously slight right hemiplegia had occurred, speech being quite lost at the time. Since this attack speech had been very indistinct. Tongue deviated to right when protruded, and it was furred. No other details were obtained from patient's friends. He was at once admitted into the hospital. Patient had had rheumatic fever about thirty years ago; denied ever having had syphilis.

Present state (March 22).—A somewhat pale and ill-nourished man who takes very little notice of what is going on around him. On admission he was slightly aphasic, more so than at present. Now his utterance is thick and slightly tremulous, but there is no aphasia proper. Is slightly confused sometimes in giving an order. Face: Upper movements equal; on showing teeth left half of upper lip is well drawn up though right droops. No tremor observed in facial muscles during action or when patient is speaking. Tongue curves slightly but distinctly to right when protruded; no wasting of organ, but it is very tremulous. Palate: Arches equally drawn up in saying "ah."

Trunk.—Sensibility unaffected; feels light touches equally well on the two sides. Reflexes: Epigastric and lower abdominal very brisk and equal. Organic reflexes: Has some slight difficulty in swallowing; has to drink slowly, but fluids

do not regurgitate through the nose. No loss of control over sphincters.

Arms.—No blunting of sensibility on either side. All movements freely carried out, but right arm weaker than left. Grasps, right 70, left 80. Slight tremor, more marked in left hand. No rigidity or contracture. Reflexes: That of triceps and wrist present and equal on two sides.

Legs.—Very thin and poorly nourished, but no wasting of any special groups of muscles. Sensibility unaffected on either side. All movements freely carried out on both sides; those of toes and of foot at ankle not quite so free on right side. Right leg also cannot overcome so much resistance as left, being distinctly weaker. Reflexes: Plantar brisk, equal; knee-jerks active, equal; ankle-clonus not obtained.

Eyes.—Pupils of medium size, equal, reacting to light and on accommodation. No ocular paralysis. Nystagmoid jerks on extreme lateral deviation, also on looking up, in which latter direction they are more marked in right eye. Downward movement attended with next to no unsteadiness. Optic discs show well-marked neuritis. (Note by Mr. Gunn) "Summit seen with a + 2·15, fundus being emmetropic. Great tortuosity and distension of veins, but no hæmorrhages or white patches seen. Right eye: Condition much as in left; similar swelling, but less venous distension."

Hearing.—Watch heard, right at 8 inches, left at 5 inches.

Heart.—Action regular; at apex a systolic murmur accompanying first sound, and well-conducted into axilla. Over aortic area there is also a systolic murmur well-conducted into vessels of neck. The second sound is everywhere somewhat accentuated. Pulse 64, regular, poorly filled, of moderate tension; walls of vessels slightly thickened.

Lungs.—Nothing abnormal detected.

Abdomen and abdominal organs.—Nothing abnormal detected. Urine acid, 1020, no albumen, no sugar.

Ordered a saline aperient, and Potas. Iod., gr. x, with Sp. Ammon. Arom. ℥xx ter die.

April 6.—During last three days patient has been worse as regards speech. He has been unable to articulate so as to be understood. His general condition is not worse, and he takes his food well. When asked any questions he answers in unintelligible gibberish with no resemblance to words. The dose of the iodide has been gradually raised to gr. xxx ter die., and he has also been having mercurial inunctions since March 26.

April 9.—Optic neuritis more intense. The iodide of potassium and mercurial inunction have been suspended, and he has been taking Mist. Quininæ, ℥j ter die, for two days.

April 23.—Patient's power of articulation has not improved at all; it is if anything worse. On 21st had slight twitching of right hand. To-night the nurse observed slight twitching of left hand, and patient seemed stupid and could not be got to answer or make any effort to answer a question. When seen a few minutes later by the house physician patient was lying on back with eyes partially open, the right being markedly deviated outwards and upwards; the right side of the mouth seemed to be drawn and the left leg was jerking. A few minutes later he had a distinct attack of jerking of the left arm and leg, lasting for about a minute; the eyes were turned to the right (not excessively), and the face seemed a little drawn to the same side. After this attack he remained rather dull, moving the left arm freely, though the right arm he seemed only able to lift with the aid of the other. The condition of the optic discs is still that of acute neuritis. Potas. Bromid., gr. xx to be taken occasionally.

April 25.—Yesterday there were occasional twitchings of the hands and of the feet, sometimes on the right, but sometimes, and more frequently, on the left side. This morning patient seemed worse, twitchings on both sides, and apparently he was in pain. Does what he is told when the requests are simple; his answer to everything is "no."

May 5.—Last night had an attack lasting about ten minutes, in which there seemed to be tonic spasm of the face muscles, not more marked on one side than on the other. No deviation of the eyes; face very dusky, and there was no appreciable movement of the chest-walls or of the diaphragm. The right arm and leg were motionless and apparently helpless, but the left side did not seem to be affected. The patient was not completely unconscious; head was turned to the right, but head has been kept to the right for some days. The iodide of potassium was renewed on May 2, in 15 gr. doses, three times a day.

May 12.—After last note patient remained in a very helpless condition. He seemed not to understand what was said to him, and the only words he uttered were "yes" or "no." At times "yes" was his invariable answer to questions, at other times "no." Occasionally he seemed to suffer severe pain, and looked very distressed. He lay almost constantly with his head turned to the right. He passed his

evacuations in bed; he had no retention of urine. On the night of the 8th inst. he was observed to have well-marked Cheyne-Stokes' respiration. There was no recurrence of convulsive movements. He gradually sank, dying on May 9.

Morning and evening temperature records were kept from April 1 onwards. Having previously been subnormal, on April 4, 5 and 6 it rose once in the day between normal and 99°; thereafter it ranged between normal and 97° till April 29, when it stood at 98·8° both morning and evening. Again it ranged between 98° and 97° except on four occasions, viz. 96·4° on May 4; 100·4° on the evening of the 6th; 99·4° on the evening of the 8th; whilst at 6.30 A.M. on the following morning, at the time of death, it stood at 100·2°.

Autopsy on May 10th.—Body fairly well nourished; rigor mortis considerable. Heart:—Pericardium almost uniformly adherent, especially over the anterior surface of the heart. The left ventricular wall was hypertrophied. There was considerable thickening and opacity of each of the aortic cusps, though they were not adherent and seemed to shut well together. There was a similar thickening and opacity of the mitral cusps, but the mitral orifice was of medium size. Left lung small, containing at apex an old tubercular nodule about the size of a hazel nut, surrounded by pigmented fibrous tissue. Right lung large, œdematous, and containing at apex several small and one larger tubercular mass. Several were in a calcified state, and one showed signs of breaking down—pus could be squeezed out of it. Spleen small and rather anæmic. Kidneys, liver, and testicles were natural and showed no tubercular nodules.

The calvaria was thin and without diploe. Dura mater not unnaturally adherent or thickened. Convolutions flattened, over anterior part of left hemisphere especially. The membranes at the base presented no distinct signs of inflammation, except at the commencement of the left fissure of Sylvius; its sides were glued together, and when opened up the pia mater was found to be thickened and granular. Signs of inflammation existed also over the lower part of the surface of the left hemisphere, reaching about midway up over the fissure of Rolando. The right Sylvian fissure and surface of the hemisphere were affected only to a very slight extent. On making transverse sections through the left hemisphere, a tubercular tumour was found implicating the left centrum ovale and extending into the grey matter of Broca's convolution. Its size was that of a small orange, and its consistence

slightly harder than the normal white substance of the brain. It extended to within a few millimetres of the median fissure, but did not implicate the ventricles. Posteriorly it extended into the ascending frontal convolution. Lateral ventricles not dilated, and containing no distinct excess of fluid. The choroid plexuses appeared unnaturally granular, but in other respects the cerebrum presented nothing abnormal. Cerebellum :—The arachnoid over the dorsal surface of the middle lobe was studded with a number of granulations. The white and grey matter of the organ showed nothing unnatural. The pons and medulla appeared natural to the naked eye. The spinal cord also seemed healthy, and was of firm consistence; its meninges were healthy.

This case, like the last, is one in which the discovery of the existence of tubercular meningitis was something of a surprise. Nothing could be discovered during life that gave any clue as to the nature of the tumour of the brain from which the man was suffering. There was no history of past lung disease, there was an entire absence of present symptoms of disease of that organ, and the small old nodules in the apices of the lungs, found at the autopsy, did not reveal themselves by any distinct physical signs.

On admission, the patient's symptoms seemed evidently referable to a tumour in some part of the left hemisphere, but it appeared not improbable that there might be more than one lesion, and the possibility of syphilis rather than tubercle was suspected. Owing again to the existence of old valvular disease it was deemed just possible that the symptoms due to tumour might have been complicated by the occurrence of one or more small embolisms. Thus, although there was a partial right hemiplegia on the patient's admission together with a slight aphemic and amnesic defect of speech, on April 23rd and also on May 2nd he had peculiar attacks with twitchings and tonic spasms in different parts on both sides of the body. After these attacks the right hemiplegia became more marked, and great mental obtuseness also existed, the patient not seeming to understand even the simplest remarks that were made to him. He also appeared from time to time to suffer much pain. After the attack on May 4 his respiration became more and more impaired; on the third day it became of the Cheyne-Stokes type, and on the following day he died.

Probably the tubercular meningitis, which was found to

be in a very early stage, was not initiated till about the end of April, though it is impossible to fix the date by the occurrence of any distinctive symptoms, the clinical picture being so dominated by signs and symptoms referable to the tumor cerebri.

Whether the tumour in the brain, which presented all the naked eye characters of a tubercular growth, is or is not to be considered as a genetic sequence of the old quiescent foci of disease in the lungs, it seems very probable that the incipient tubercular meningitis owed its origin to the pre-existence of the tumour. Its development was probably the beginning of a general tuberculosis which, had the patient lived longer, would have shown itself also in the thoracic and abdominal organs. It is interesting here again, as in the last case, to find the tubercular meningitis in the main following the distribution of one of the middle cerebral arteries, and in this situation creeping up over the left parietal region.

X.—*On a case of "Negro Lethargy" or "the sleeping sickness" of Africa.* By Stephen Mackenzie, M.D. *Read November* 14, 1890.

MANDOMBE was born and has lived all his life in the village called Tombo, situated in a valley about 1300 feet above the sea, and from which the hills run up to a height of 400 feet. The whole of the little village of about 300 souls appears to have been decimated by the ravages of "sleeping sickness;" two or three people died every week till scarcely any one was left. Some of the folk fled to other places. Mr. Richards, a missionary on the Lower Congo, knows of no village where the mortality has been so great.

The villages on the hills close round, however, have not been exempt from the disease, and, whereas it has occurred in this particular instance in a valley, it by no means seems located wholly in such places. Close by the village of Tombo is a swamp caused by the streams coming down from the neighbouring hills, and on this spot has grown up a wood which harbours an immense amount of decaying vegetation and consequently fosters malarial miasma.

Family history.—Mandombe's mother died of sleeping sickness, that is to say of a rapidly fatal form of disease, characterised alike by increasing weakness, wasting, and sleeping attacks; the duration of the whole malady was only a few months. She developed no other symptoms whatever, Two sisters died from the same disease: the case of the one was like that of the mother, whilst the second sister appears to have suffered in addition from dropsy. His father died when he was a little fellow; he does not know how. Nearly all his relations on both sides of the family have been carried off by this fatal malady, and Mandombe's own impression is that the mischief is hereditary. On this point Mr. Richards says that people who live together in the same house frequently seem to suffer; brothers and sisters consequently very frequently develope the disease. He, however, does not feel sure of its hereditary nature. Mr. Richards instanced the case of one man who had three wives, he himself died of sleeping sickness, and two of his wives

speedily perished of the same disease; the third seemed to have a commencing attack, but she got over it. Whether this latter was really a case of the genuine disease or not is quite open to question.

Personal history.—Mandombe is a young man of about twenty-two years of age, married, with two children, one boy and one girl, wife and both children are well, he himself has all his life, as long as he remembers, enjoyed good health (with the exception of one or two attacks of malarial fever). He is an unusually bright and energetic fellow, and Mr. Richards, who has known him for eleven years, considers him an exceptional man in these particulars. He has been employed as a carrier in connection with the transport work on the Congo, and in this occupation has always distinguished himself as a trustworthy man and faithful servant. In the recent letter which I have received from Mr. Ingham on the Congo and which was addressed to Mandombe there occurred this sentence: "I am very sorry that you have left me to go to England, for I have no one now who, like you, will work behind my back as well as before my face."

History of present illness.—In June last Mandombe came to England at his own request partly to see if we could help him in connection with the sleeping sickness which he had apparently contracted about the commencement of the present year, and partly in the hope that the study of his case in England might lead to the discovery of a cure for other sufferers from the disease. He first suffered from the oncoming from a persistent kind of diarrhœa which lasted for about a month. From his account this was not an attack of dysentery. After a month the diarrhœa ceased, and he then commenced to feel a dulness and heaviness, though at this time he did not betray much drowsiness.

Condition in June.—When Mandombe first came to me his intelligence was good. Facial expression varied, mental state alert. He responded eagerly to questions, and was very vivacious, and sometimes almost facetious. Mr. Richards noticed, however, at this time a drooping of the eyelids, and a peculiar heavy expression which he considers pathognomonic of sleeping sickness. He slept well, but not excessively, although every now and then in the day he certainly was peculiarly drowsy. He complained of no pain, *and on careful examination at the hospital he betrayed no evidence of organic disease.* His urine was carefully tested, and sphymographic tracings of his pulse were taken. He had an inflammatory

condition of the skin of his legs resembling eczema which soon healed under local treatment.

Condition on October 4.—Intelligence still good, but a very great change has come over him, instead of responding rapidly to questions when they are put to him, he evinces a mental fatigue and lethargy which are striking. He understands what is said, but to think consecutively or put forth any effort of memory is now entirely beyond his powers. He sleeps well, but although he has not betrayed any sleeping attacks during the day, when away in the country during the months of August and September, drowsiness during the daytime seems of late to be increasing on him. He likes to go to bed early at night, and it is difficult to get him up for breakfast in the morning.

Motor power.—His motor power is becoming increasingly impaired. During this summer I have employed him chopping wood, but during the past five weeks this has become quite too much for him, not only does tremor accompany his smaller movements, but great weakness characterises all the larger ones. This tremor has so increased on him lately that it is with great difficulty for the last week that he has been able to put any food into his mouth. If he attempts to rise from a sitting posture he does so with great difficulty and deliberation, laying hold of various objects at hand to assist him in rising to his feet. Finally he walks with the decrepit gait of an old man, instead of with the firm step which he had a few months ago. It takes him an hour to dress in the morning, and he experiences the greatest difficulty in creeping downstairs, his gait is uncertain, tremulous, and feeble, and he seems scarcely able to stand upright. Mr. Richards says that he has frequently seen natives thus suffering walk with a staggering gait.

October 5.—Tremor and weakness are becoming excessively marked, he is evidently becoming rapidly worse. He sometimes passes his urine beneath him in bed. To-day he could scarcely protrude his tongue, which was excessively tremulous. He still complained of no pain, although on palpation over the right iliac fossa he evinced signs of tenderness.

He complained of neuralgic pains for about a week in September, before and behind the ear. On administration of antipyrin gr. v, and afterwards exalgine gr. iij, this cleared away.

October 5, Evening.—Mandombe was so weak that he was unable to reach his bedroom to-night, but fell on the floor,

where he remained and apparently fell asleep until he was found, and conveyed to his room. It was then found that his temperature was raised, 103° F. He soon became bathed in a profuse perspiration, and fell asleep.

October 6.—This morning his pulse was for a while 164 per minute, and his respirations at 60 per minute; the latter were shallow and restrained. He was still soaking in perspiration and had passed his water under him during the night. He was lying on his side with his legs flexed on his abdomen. He complained of abdominal tenderness.

For the foregoing notes, and for much valuable information on negro lethargy at the Congo, I am indebted to Dr. Gratton Guinness who kindly placed the patient under my care.

Mandombe was admitted into the London Hospital on October 6, 1890. He presented the usual physiognomy and colour of the negro race. His body was moderately nourished, the skin dry, the mucous membranes of natural colour. His tongue was tremulous, rather dry, flabby, and indented by the teeth. The liver dulness commenced above at the seventh rib, and extended to the lower costal margin. He complained of pain in lower part of right chest, and flinched when the liver was percussed. The abdomen measured 34¼ ins. in circumference, and there was a doubtful fluctuation wave. His pulse was 138, of fair force and regular. The heart's apex beat in the sixth space, four inches from the mid-sternal line. No murmur audible, first sound at apex rather toneless. The lungs were normal except for a few râles at the bases. His conjunctivæ were injected; pupils of medium size, equal, and reacted to light. The retinal veins were large and dark, the edges of the papillæ well-defined. Examination of his blood showed 110 per cent. of coloured corpuscles, 70 per cent. of hæmoglobin, 1 colourless to 275 coloured corpuscles. Urine 1034, acid, albumin a trace, no sugar. His temperature was 101·3° F. on the morning of admission, but fell to 97° in the evening.

His general appearance on admission was not that of a person profoundly ill. He had been sleeping most of the time since his admission. When roused he appeared fairly intelligent and observant of what was going on around him. His conversation was practically limited to monosyllabic answers to questions. He did not seem reticent or morose, simply quiet or lethargic. His motor powers were very

feeble; he walked in a tottering manner, and he was extremely tremulous, especially in the upper extremities and tongue. Cutaneous sensibility (to pin prick) was everywhere present. The knee-jerks were good, if anything rather glib; superficial reflexes present, no ankle-clonus.

October 7.—My house physician, Mr. A. H. St. L. Fagan, thought it probable that the patient might be the subject of filarial infection, and examined his blood this evening with the object of determining this point. Each slide examined was found to contain on the average about six embryo filariæ sanguinis hominis.

His condition between the time of his admission and the present time may be summarised. He was put on a nutritious diet, was given a warm bath each day, and ordered a saline diuretic, with sulphate of magnesium. This, with occasional five grain doses of quinine, is all the medicine, except aperients as required, he has taken. His mental condition has been slightly variable, but on the whole has progressively deteriorated. Frequent mention occurs in the notes of the patient being in a kind of stupor, and being "downcast." He rouses up at times, however, and appears to be interested in letters from home which have been read to him by the sister or nurse. He hardly ever converses with anyone spontaneously, but replies to questions put to him, usually slowly and in monosyllables. His condition is perhaps best described as one of lethargy or torpor. How much of this is due to the unusual circumstances in which he is placed is difficult to estimate, but it contrasts very strongly with his condition when he first came to this country. As regards sleep, it may be generally stated that he has frequent short sleeps of from half an hour to an hour both by day and night, that he rarely sleeps for long together, three hours and a half being about the maximum even at night, and that his sleep in the aggregate does not exceed the usual amount of health, and indeed is generally below this. Careful records have been kept of the amount of sleep he has had since he has been under observation, which show that the average amount of sleep is three hours fifteen minutes by day, and four hours fifty-six minutes by night, or eight hours twenty-nine minutes in the twenty-four hours. The most noticeable peculiarity is the relatively large amount of sleep in the daytime. The last two or three days he has slept much more than at any previous time, and, in fact, he has been more or less constantly asleep.

His muscular power is certainly feebler, so that he cannot sit up long without fatigue. Tremor has been a conspicuous feature of his case. It was very great when he first came to the hospital, just after he had been found in a state of insensibility, with high fever and profuse perspiration. He had such an attack on October 27. He had a prolonged rigor, accompanied by extreme tremor, which persisted after the rigor. His temperature, which had been nearly normal for some days, went up to 103°. His pulse was 120, respirations 32. His tongue was red, moist, and tooth-indented. The temperature came down the next day, but the tremor remained very great.

His temperature has been irregularly febrile, remittent in type, moderate in degree, and presenting no regularity in its exacerbations, but preserving the usual characteristic of evening maxima. His pulse is usually above 100, frequently 120, and has been as high as 144 and 150. No fresh signs have developed in his lungs. His tongue is exceedingly tremulous. His appetite has varied. As a rule it has been good, but when more febrile he has eaten but little. His bowels have been as a rule confined; when acted on by medicine the motions have been loose, dark brown, with occasional blood. The abdomen has remained rather large, with doubtful fluctuation. The pain in the hepatic region soon disappeared. The liver and spleen are not enlarged.

Urine is scanty (not averaging 20 oz.), and as a consequence concentrated and of high specific gravity, generally about 1034, sometimes as high as 1040. Recently it has fallen a little, and on Nov. 8 was 1016. It is dark brown in colour, usually acid in reaction, deposits sediment of amorphous urates and phosphate of lime. The urine contained a trace of albumen on the two first days of observation: never since. Sugar and bile pigment have never been present. He now passes urine and fæces involuntarily. The patient has lost weight; admitted, he weighed 10 st. 1 lb.; on Oct. 19, 9 st. 9 lbs.; and on Oct. 26, 9 st. 5 lbs.

A bedsore, with a long and deep sinus, has formed over the sacrum. His gums have become recently soft and spongy and bleed readily. Breath offensive.

The number of embryo filariæ in his blood has been systematically counted by Mr. Fagan and Mr. Jones. They have always been present at all hours of the night and day, but their numbers have varied at different times of the

twenty-four hours, and on one day as compared with another. The exact periodicity usually observed in this condition has not been present; no doubt owing to the pyrexia from which to a greater or less degree he has suffered since he has been under observation. Dr. Patrick Manson, who was the first to point out the periodicity of filarial migration, has also shown that its normal rhythm is always disturbed by the pyrexial state. In the present case the rhythm has been most irregular, sometimes the maximum being in the evening or night, sometimes in the afternoon, and occasionally, but rarely, at midday. As regards numbers we have very exact information. Mr. Fagan has always counted the number in 20 cubic millimetres of blood. The maxima have been usually from 20 to 35 until quite recently; 35 has been reached on four occasions, once at 4 P.M., and three times at 8 P.M. But within the last week these numbers have been exceeded, reaching 55 at 8 P.M., on Nov. 7; 78 at 8 P.M., on Nov. 8; 55 at midnight, on Nov. 9. Assuming his total volume of blood to be one-thirteenth of his body weight, and that his blood generally contains filariæ in the same proportion as that drawn from the finger pad, the maximum number of filariæ in his blood at any one time would be 118,965,600. There are two minor points to be noted as regards the filariæ. 1. Their variability in size; a large number being much below the average size. 2. The brief viability of the filariæ when removed from the body. In other cases I have watched they have usually lived in a slide, without special precautions, for two or three days, and have been observed to live for a week. In this case the majority perish in the course of a few hours, and the longest period they have been found alive by others and myself has been about 18 hours.

A microphotograph of the embryo filariæ brings out very well the two sizes which were observed. Dr. Patrick Manson has since pursued an inquiry on the nature of the filariæ present in this case, and in some other negroes from the Lower Congo, and has established that the smaller one is a new and hitherto undescribed species (vide *Lancet*, Jan. 3, 1891, p. 4). It appears from his observations that the larger filariæ differ in some respects from the *Filaria Sanguinis Hominis* (Lewis) met with in Asia. There thus appear to be at least three variations of filariæ found in the blood of the human subject up to the present time, which Dr. Manson proposes to designate. 1. *Filaria Sanguinis Hominis* (Lewis). 2. *Filaria Sanguinis Hominis Major*. 3. *Filaria Sanguinis*

Hominis Minor. The two latter were present in Mandombe's blood, and are shown in the micro-photograph (Plate II).

Such are the chief facts in this case, which may be regarded as a characteristic example of what has been named Negro Lethargy or Sleeping Sickness. The term "Sleeping Sickness" must not be understood to indicate a tendency to vomit, but sickness is used as synonymous with "illness," as in the instance of the "falling sickness" and epilepsy.

According to Hirsch, who gives a brief but admirable account of the disease in his Handbook of Geographical and Historical Pathology" (New Sydenham Society, translation by Dr. Creighton, vol. iii, p. 595), attention was first called to it about the beginning of this century by Winterbottom, a surgeon in the British service, as a disease of the natives along the Bight of Benin, which consisted in a peculiar state of lethargy, and was always fatal sooner or later. Our more precise information about the malady dates from 1840, when Clarke published the observations that he had made of it in Sierra Leone. It has since become the subject of a large number of inquiries by English and French observers, the bibliography of which will be found in Hirsch's work.

The following clinical characters are described by Hirsch: The onset of the distinctive morbid phenomenon, a state of lethargy or reverie, is often preceded for a considerable time by a series of prodromal symptoms which are so characteristic that those in the individual's company are never deceived as to the fate in store for him. He complains of weakness, especially after considerable exertion, of low spirits, disinclination to work, pain or a feeling of weight in the head, and giddiness. He has a desire to give himself up to repose at other than the usual hours, seeking out some solitary and quiet spot wherein to pass the time half asleep. Although he may strive against that disposition with all his might he cannot altogether conquer it, and it is only amidst the livelier kinds of excitement that he is able to remain brisk. His gait at the commencement of the malady is still firm, although he is so easily tired; but as the disease proceeds and the lethargy becomes overpowering, he goes about with his eyes half shut and his walk becomes unsteady like that of a person in drink. There are no disorders noticeable in the other functions so considerable as to suggest a profound and mortal disease; unless it be a lowering of the body temperature, which makes the patient feel the need of warmth and causes him to sit in the sun, together with a certain degree of

slowness and sometimes irregularity of the pulse. In severe cases there is an evening rise of the temperature to 38·5° C., or even above 39° C. (100° to 102° F.), with a quick pulse (Corre). The patient's sensory perceptions as well as his intellectual faculties are quite unimpaired; if he is not talkative, he answers promptly and intelligently when spoken to. As the disease progresses his expression betokens dulness of thought; his gait becomes slow, uncertain, and tottering; although when he is thoroughly interested he can still execute any kind of movement. Meanwhile the somnolence has increased so much that he can hardly control it; it becomes difficult to rouse him, and not unfrequently he falls into a lethargy in the midst of the loudest noises or over his food. "J'ai vu le malade, que je pressais de boire," says Nicolas, "essayer de porter le verre à sa bouche et s'assoupir avant d'avoir achevé ce mouvement si simple;" and Gore quotes the following remark by Fergusson: "I have seen the subject of a case lying fast asleep with a mouthful of half-chewed victuals in his cheek; he had, in fact, fallen fast asleep while eating his dinner." Concerning the nature of this somnolence, Corre has the following: "La somnolence, exceptionellement poussée jusqu'au coma, rarement continue, n'est pas rigoureusement constant. Tous les malades atteints de nélavane ne dorment pas; beaucoup demeurent couches, les paupières fermées, demi-occluses, ou complétement ouvertes, mais sans autre séparation d'avec le monde extérieur qu'un profond indifférentisme. Il est à remarquer que la plupart des malades véritablement somnolents vient le sommeil quand on les interroge: ou ne les a pas plutôt quittés qu'on les aperçoit étendue dans un coin de cour ou de cas."

Apart from a more or less considerable loss of the sense of touch, which serves to explain also the uncertainty in the movements, especially those of the upper extremity, there is no sensory disorder noticeable. Sometimes the memory is slightly impaired, but in other respects the faculties of the mind are intact. In many cases convulsive movements occur, without loss of consciousness, or it may be merely slight choreic movements; these are followed by temporary contractures or paralysis of certain parts, and in most cases by an increase of the lethargy. When the latter is very profound there may be involuntary evacuation of the fæces and urine. Even when the disease has made great progress there is nothing abnormal to be noticed in the vegetative functions of appetite, digestion, and nutrition. The stools are mostly

without colour, as they are apt to be in negroes, even in a state of health; the urine contains no precipitate, is of clear colour, and free from albumen. It is not until the disease has reached its acme that the patient begins to waste; at the same time the pulse becomes slow and small, the skin assumes a dried-up, earthy, or ash-coloured appearance; sometimes there is slight œdema round the ankles (but never dropsy fully developed), the drowsiness becomes continuous, increasing gradually to a profound coma, and life goes out for the most part very quietly but sometimes in a paroxysm of convulsions. Intercurrent disease, such as dysentery or pneumonia, may hasten the fatal issue, which would seem to be in any case almost inevitable. Of 179 negroes suffering from lethargy, who were under treatment by English practitioners on the Sierra Leone Coast during eleven years (1846–50 and 1859–66), the disease had proceeded to a fatal issue in 132. The duration of it (not including the prodromal stage, which is often very protracted) is from three to twelve months, or even longer.

I am able by the kindness of Mr. Grattan Guinness to supplement this admirably concise yet ample statement of Hirsch's, by some cases which have fallen under the observation of Mr. Richards.

Mr. Richards' Cases.

"Case 1.—Kati. Mr. Richards knew a woman, married; had known her for several years, when she became afflicted with sleeping sickness. She was a witch doctor, and consequently a highly intelligent woman amongst the natives. She became a Christian, and afterwards was most energetic and devoted in her life for some time. She was far above the ordinary run of lower Congo natives. The commencement of her sickness was signalised by an acute attack of religious mania, in which she commenced to pray in a loud voice, and would pray loudly and yet more loudly, till she commenced to dance in the midst of her prayer. This paroxysm would pass away after a time. At another period she had visions, in which she thought she saw the Lord Jesus personally. At this very time Mr. Richards observed that her gait was peculiar. She could not walk straight, and seemed to ramble from side to side. There was no swelling or any other symptoms visible, and no tendency to sleep. There was, however, a peculiar facial expression which Mr.

Richards had noticed. The religious mania now increased, and eventually she had to be restrained from going out at all, as otherwise she would have gone to neighbouring houses and have waked people up during the night, and have committed various extravagances. She never injured anybody all this time, nor was there any tendency to suicide or homicide. She eventually became weaker, till she could not recognise even Mr. Richards. Finally she became entirely insensible, and she lay in that state for about a fortnight. Then she began to swell, and at the end of another week or ten days her features were almost unrecognisable. The poor swollen lips now became covered with sores, as she lay in an absolutely insensible condition, and was fed by her friends. From the time she became unconscious she lived for about a fortnight, and then quietly passed away.

In this particular case the woman did not sleep at all excessively, but the people who were around her recognised the peculiar facial expression which is always present in this disease, and she herself felt that the sleeping sickness was upon her, and came to know if Mr. Richards could do anything for her, and promised to obey him implicitly if he could only cure her.

The whole of the sickness lasted over some three or four months, and the woman seemed every now and then to improve under Mr. Richards' treatment of quinine and iron, hot baths, and good diet.

Case 2.—The case of a man whom Mr. Richards had known for some time, whose trouble commenced by sleep overcoming him during religious services. He would try to shake it off, but it laid irresistible hold of him. He then became weaker. Mr. Richards advised him to change the locality of his home, which he did, as a carrier; but he eventually found that this occupation was too arduous for him, and had to give it up. He became then still weaker and slept more than ever, till at last his condition became very similar to that of Mandombe.

The whole duration of the disease in this instance was about six or eight months. There was no mania, no swelling, no ulcers, and nothing but the two symptoms of sleeping and accompanying weakness.

Case 3.—Mr. Richards also cites another instance of a man who commenced to go to sleep during the services, and

who came to him complaining that the sleeping sickness had laid hold of him, and desiring to be treated. Mr. Richards gave him a 40-gr. dose of quinine, which seemed to have the effect of relieving him entirely of all symptoms for the time being. He remained well for a year, when a second attack came upon him. Mr. Richards left the Congo at this time and was unable to treat him, but has since heard of his death. This particular patient manifested his weakness in a want of personal care and cleanliness; he seemed too tired to look after himself decently.

Case 4.—A little girl, the daughter of one of the local potentates, Makokula, who was a very intelligent child. (Mr. Richards thinks it lays hold of the most intelligent all the more easily.) She commenced her sickness by the sleeping symptoms, but after some little time—he thinks about a month—she became maniacal; and after about a month of raving madness she died of exhaustion.

Mr. Richards seems to think that the term sleeping sickness has been applied to this malady, not so much on account of the sleep characterising its duration as its close. Thus, when they become exceedingly exhausted by mania towards the end of the disease, they fall into a comatose condition; but in those instances where mania is absent sleeping characterises the whole of the complaint.

Dr. Sims, of Stanley Pool, believes this disease to be similar to the beri-beri of the Indians. (No evidence of this view is given.)

Dr. Small, of America, who has laboured on the Lower Congo, seemed to think that it was a form of Bright's disease, and that the coma was due to uræmic poison. I cannot, however, find out whether he ever tested the urine of these people and discovered albumen present, and more especially if he made a quantitative analysis of the amount of urine. Mr. Richards does not think that either of these theories is correct.

Dr. Small resided with Mr. Richards for some time on the Congo in the same house, and consequently Mr. Richards had ample opportunity to see whether he ever tested the urine. He is sure he never tested the urine in the method I described to him, and he very much doubts whether he ever employed a test-tube at all.

Mr. Richards' distinct impression is that the largely preponderating number have the sleeping form of the disease,

perhaps one in ten of them only exhibiting the maniacal symptoms.

Case 5.—One of the translators employed by Mr. Richards appeared to suffer from a mild form of this disease (as also a great many of the country people), in which he merely slept for a moment and then woke up with a start to resume his ordinary duties. For instance, Mr. Richards would appeal to this man in connection with translation as to a certain word, and find him asleep. The man would then rouse himself and return Mr. Richards the correct answer. If Mr. Richards were to let him alone he would again go to sleep in a few moments. This was only marked in this particular man every now and then, and he has continued to live for a number of years without developing further symptoms. Whereas this mild form may last for a number of years, it appears occasionally to be apt to develop very rapidly in a fatal direction. Paul's story already cited is an example.

Mr. Richards mentions another interesting instance of a woman called Makambi, who, after suffering from the sleeping sickness in the ordinary form of it, for some time became insensible. She was so weak that she could not get up, and with difficulty was aroused to take food and to speak to those about her. She remained in this condition for about three months, and eventually developed a large bedsore on one of the buttocks. Mr. Richards treated her at this time with iron and quinine, and oiled dressings for the bedsore. She rallied in a wonderful way, and was afterwards able to get up from her couch, and presently came up to religious services as she had been wont to do. For a time Mr. Richards thought she had made a perfect recovery, and when he left the country she appeared perfectly well; but he has since heard that she has had a fatal relapse. No maniacal symptoms complicated this case. Thus, with good food and energetic treatment with iron and quinine, two similar cases in the hands of Mr. Richards and Dr. Small have apparently recovered for a time, but in every instance they have eventually relapsed and died. Mr. Richards thinks that if the malady has so laid hold of them as to have induced any marked degree of debility, the case has probably passed the boundary line of the curable.

As regards the areas of distribution of negro lethargy, according to Hirsch, it includes a large part of the west coast

of Africa, between the Senegal and the region of the Congo. Whenever the disease has occurred beyond these regions, it has been only in negroes imported from the west coast. The disease has been found only in *negroes of pure blood*, with two exceptions: one, a case of a mulatto, reported by Charsaniol; and the other, of a Creole negro boy, reported by Clarke. It has been asserted by some writers to be more common in males than in females, but those of longest experience are agreed that the number of cases is much the same in either sex. It spares no time of life, but it oftenest attacks negroes from twelve to eighteen years of age, and rarely anyone younger.

Morbid anatomy has thrown no decided light on the nature of the disease. Changes have been found in the nerve centres, but it is questionable whether these should not be regarded rather as the consequences than as the causes of the disease.

Coming to the etiology of the disease, various causes have been assigned. Hirsch says, "It is obvious that the origin of the malady has nothing to do with influences of climate and soil," but thinks "there is some foundation for the surmise that its cause will be found to lie in certain agencies bound up with the *manner of life* of the natives in those regions, but no one has succeeded hitherto in reaching anything definite concerning them; and all the hypotheses that have been tried have proved to be untenable." It has been ascribed to a toxic process from smoking "dianba" (Indian hemp), to drinking palm wine, and to criminal poisoning; but these find more objections than support. It has been attributed to depressing emotions, particularly those associated with the slave trade (nostalgia, sorrow from the breaking-up of families, or the feelings arising out of bad treatment at the hands of slave-dealers and slave-owners); but this is disposed of by the comparative rarity of the disease when the slave trade was most active, and its prevalence in negroes in a free state, in their native seats, and amidst orderly, if not particularly good, conditions. It has been attributed to *glandular swellings in the neck*, exercising pressure on the vessels going to the brain. This, however, is practically disproved, as in the present case, by the absence of such swellings, and by their inconstancy in other cases.

In the case shown this evening the presence of filariæ in the blood raises a new question, Whether this stands in any causal relationship to the disease? It is clearly a point which needs further examination, but I am quite indisposed

to believe that the association is otherwise than accidental, chiefly for the following reasons. When filarial infection gives rise to pathological consequences, it does so by inducing mechanical obstruction to the lymphatic system, and the consequences, or symptomatic expressions of the disease, are always local diseases, *e. g.* chyluria, elephantiasis, lymph-scrotum, &c. Further, Manson, Paterson, and others, have shown that filarial infection is extremely common in the regions in which it is endemic, in persons presenting no evidences of disease. I had recently another case sent to me by Dr. Gratten Guinness, believed to be "sleeping sickness." The patient, a young negro, developed acute mania, and is now in an asylum. Since filariæ have been found in the blood of the present case, Dr. Gratten Guinness has examined his blood at night, but no filariæ were found. Subsequently, on Dec. 7, 1890, Dr. Manson and I visited this patient, and on examining his blood found it to contain filariæ. They were not numerous, and corresponded in size and character with the smaller ones found in Mandombe's blood. I regard the occurrence of filariæ in the blood in the present case as an accidental association.

A theory, which has found favour with some familiar with the disease in its haunts, is that it is of a malarial nature. It is well known that there is a form of malarial intoxication which has been termed "comatose pernicious malaria." This, however, is a rapidly fatal form of disease, differing widely from the essentially chronic disease in question. Many of the characteristic symptoms of malaria, moreover, are wanting, such as splenic enlargement, retinal hæmorrhages, and paroxysmal attacks. We have at the present time, probably, an accurate means of diagnosis of malaria, in the presence in the blood of the plasmodium malariæ. The blood has been examined with the highest powers of the microscope, in the present case, without the discovery of any such changes in the coloured blood-corpuscles or the detection of melanæmia. I think, therefore, that malaria may be safely eliminated as the cause of the disease.

What the exact nature of the disease is, is not elucidated by the study of the present case, and, probably, could not be settled by a single case. The symptoms indicate some affection of the highest nervous centres without definitely pointing to its precise nature.

Postscript.—The patient continued in a very lethargic

condition after he was exhibited to the Society on 14th November, and gradually became weaker.

December 2.—The patient up to yesterday was in a lethargic condition, but becoming perceptibly weaker day by day. He has only spoken in monosyllables, or used simple phrases, such as "Good morning." Yesterday morning was noticed some difficulty in swallowing, and he put his hand to his throat during deglutition. On the evening of 30th November his head was a little retracted. Yesterday morning his head was more retracted, and has remained so. Attempts to flex it appear to cause pain. He is now, 3 P.M., lying with his head markedly retracted, and the body is twitched by convulsive movements. His breathing is jerky and irregular. Whilst observing him he was seized with spasm in the throat, and attempts to arouse him or to make him swallow brought on respiratory spasm. He lies with his eyes half open. The conjunctivæ are injected, his pupils 2½ mm.; the eyes are fixed and directed a little upwards. The skin everywhere exceedingly dry. Plantar reflex and knee-jerk present. Sordes on lips and teeth. 9.30 P.M.—The spasms have become less noisy and frequent. Tracheal râles present. Pulse 160.

The breathing became irregular and weak, and mucosanguinolent fluid was coughed up. Occasional convulsive attacks took place, and he died at 5.55 A.M., 3rd December.

His temperature the last few days had been subnormal (96°), but rose during the last day to normal, and steadily continued to rise from 8 P.M., when it was 101·6° to 106·8° at the time when death occurred.

The *autopsy* was made two and a half hours after death, with the assistance of Dr. Manson. The body was well nourished. Efforts were first made to find the parent worms of the filariæ. Axillary and inguinal glands were dissected out, cut across, the fluid expressed and examined, but no filariæ were found. The thoracic duct, receptaculum chyli, and abdominal lymphatics were carefully dissected out by Mr. Dean, Assistant Demonstrator of Anatomy, opened, and examined at various points. They presented no indications of disease, and no parent worms were found anywhere. The blood from the heart and the sinuses of the brain was collected and examined. That from each part contained abundant living embryo-filariæ of the two sizes seen during life. In the process of opening the spinal canal to examine the cord, small round or oval bodies were noticed in the dorsal

DESCRIPTION OF PLATE II.

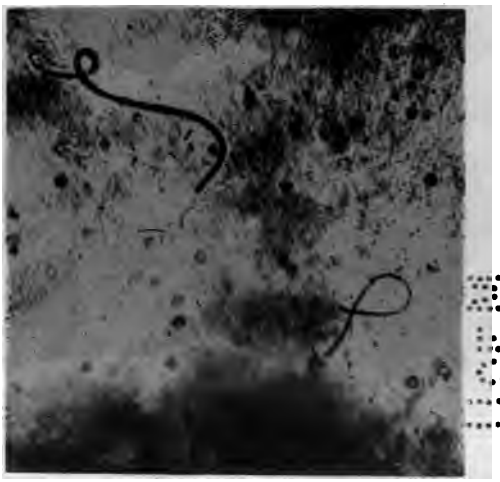
To illustrate Dr. Stephen Mackenzie's case of Negro Lethargy.

Micro-photographs of embryo filariæ sanguinis hominis. Magnified about 100 diameters.

The larger worm to the left of the plate is the filaria sanguinis hominis major—filaria sanguinis hominis diurna (Manson).

The smaller worm to the right is the filaria sanguinis hominis minor—filaria sanguinis hominis perstans (Manson).

From micro-photographs by Mr. Roland Smith.



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DESCRIPTION OF PLATE II.

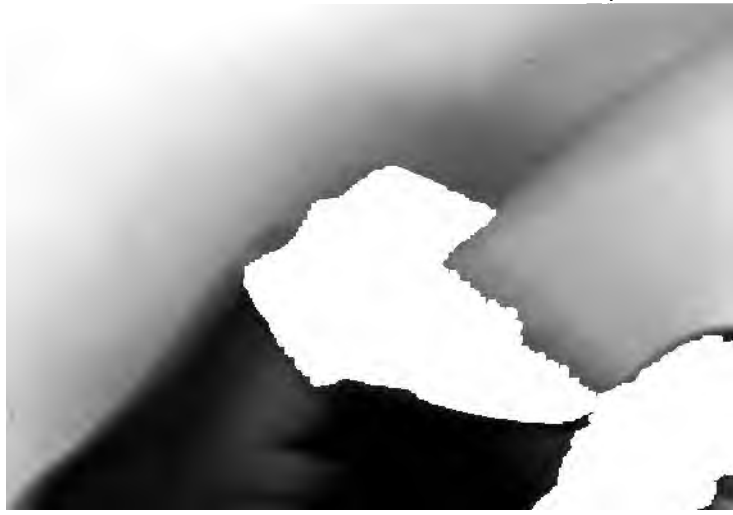
To illustrate Dr. Stephen Mackenzie's case of Negro Lethargy.

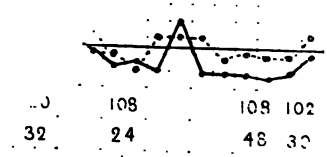
Micro-photographs of embryo filariæ sanguinis hominis. Magnified about 100 diameters.

The larger worm to the left of the plate is the filaria sanguinis hominis major filaria sanguinis hominis diurna (Manson).

The smaller worm to the right is the filaria sanguinis hominis minor filaria sanguinis hominis nocturna (Manson).

From micro-photographs by Mr. Roland Smith.





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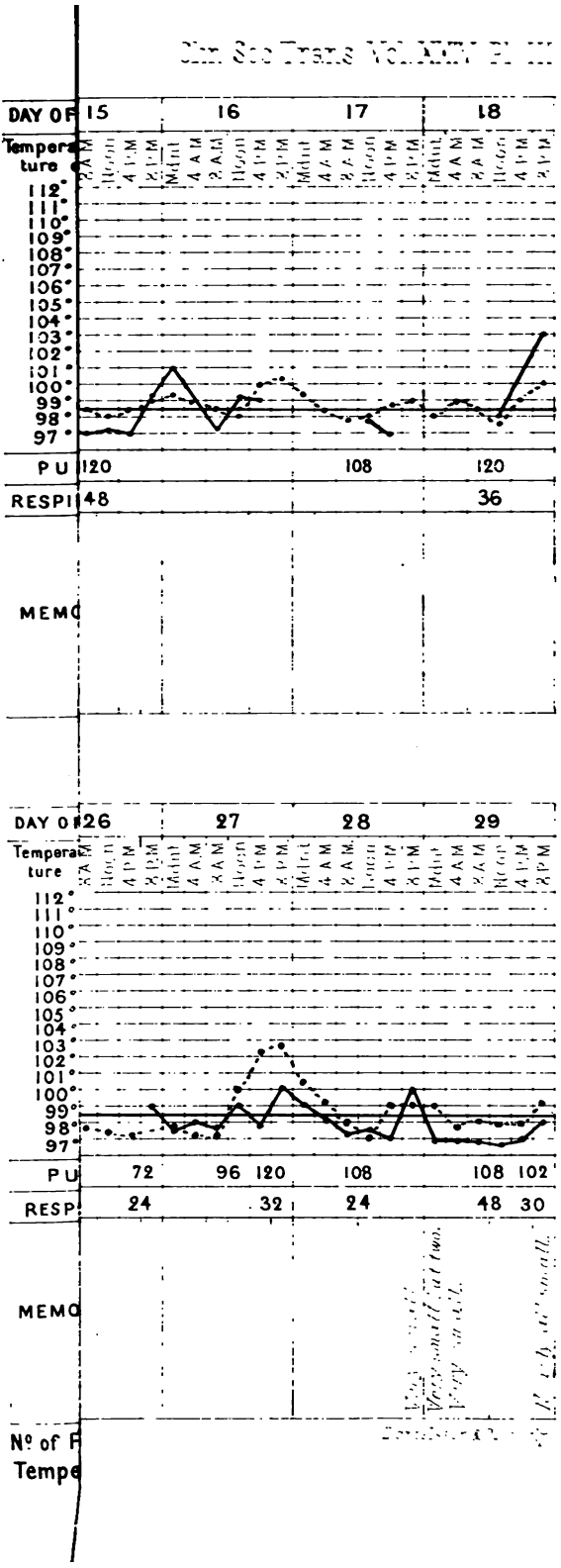
DESCRIPTION OF PLATES III AND IV.

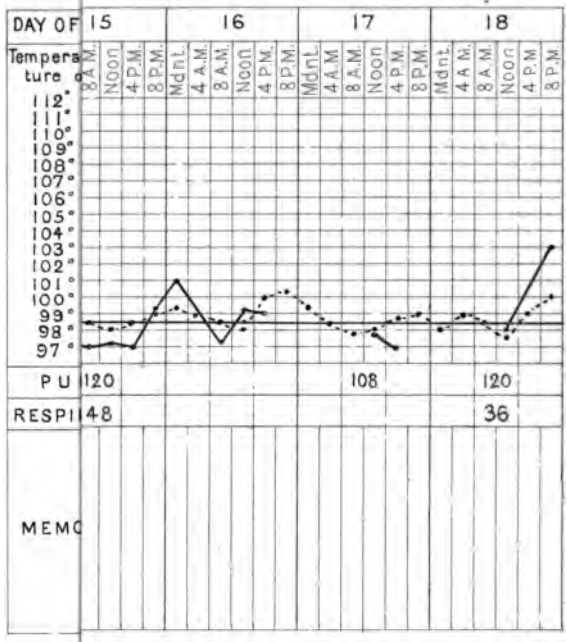
To illustrate Dr. Stephen Mackenzie's case of Negro Lethargy.

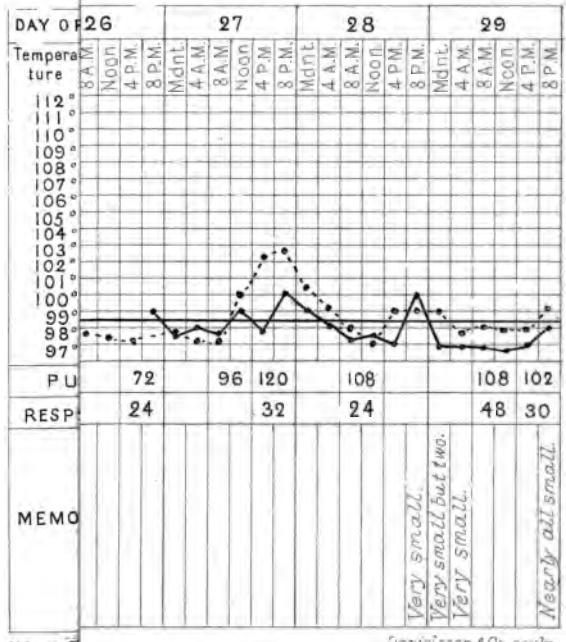
Charts showing four-hourly observations on the number of embryo filariæ in blood taken from the finger-pad, and of the temperature in the axilla.

The continuous line indicates the number of embryo filariæ (filaria sanguinis hominis diurna and perstans) in 20 cubic millimetres of blood.

The broken line indicates the temperature.

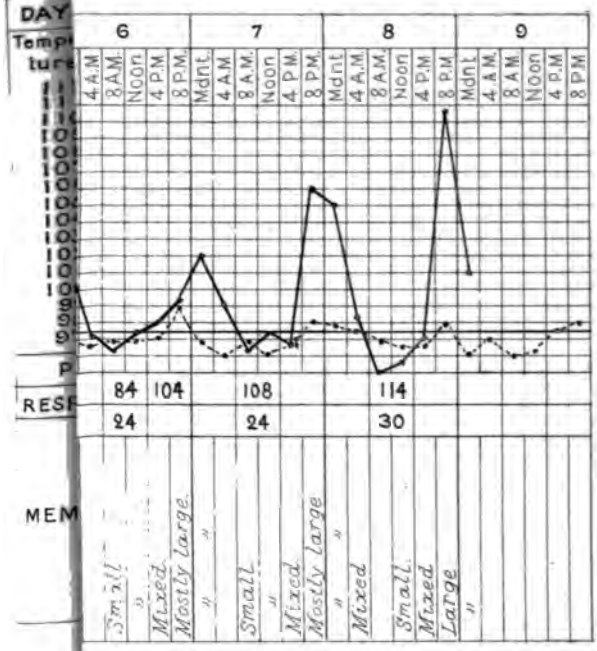

DAY OF
15
16
17
18
Temperature
112°
111°
110°
109°
108°
107°
106°
105°
104°
103°
102°
101°
100°
99°
98°
97°
PU
120
108
120
RESPI
48
36
MEMO
DAY OF
26
27
28
29
Temperature
112°
111°
110°
109°
108°
107°
106°
105°
104°
103°
102°
101°
100°
99°
98°
97°
PU
72
96
120
108
108
102
RESP
24
32
24
48
30
MEMO
No of P
Tempe

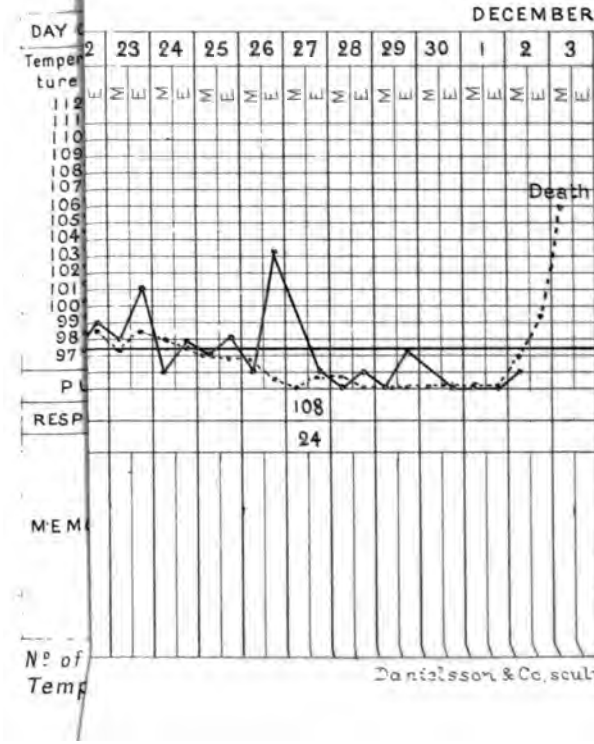




Nº of F
Tempe

Danielsson & Co. sculp.


DAY
Temperature
6
7
8
9
4 A.M.
8 A.M.
Noon
4 P.M.
8 P.M.
Mdnt.
RESP
84
104
108
114
24
24
30
MEM
Small
Mixed
Mostly large
Large


DECEMBER
DAY
Temperature
22
23
24
25
26
27
28
29
30
1
2
3
M
E
Death
108
24
MEM
Nº of
Temp
Danielsson & Co. sculp

muscles, which proved on microscopical examination to be encysted or vesicular parasites, and identified as the encysted stage of the *Tænia solium, Cysticercus cellulosæ*. Examination of the muscles in various parts showed the presence of numbers of Cysticerci.

The *heart* presented no signs of disease. It weighed 10½ oz. The muscle of good colour. Valves and orifices healthy. All recesses and pouches were carefully examined for parent worms, with negative results.

Larynx.—The epiglottis and ary-epiglottic folds were œdematous, and this no doubt stood related to the difficulty of deglutition and respiratory spasm noticed during the last two days of life.

Lungs weighed each 10 oz.; they were healthy.

Liver 2 lbs. 13 oz.; slight sublobular congestion; no other sign of disease.

Spleen 7½ oz., firm and healthy.

Kidneys each weighed 6 oz., and showed no morbid changes.

Brain.—The sinuses were full of blood, and the veins of the pia mater distended. Membranes healthy. Brain substance firm, and presented no abnormal appearance, with one exception. It was carefully sliced in every direction, and on the under surface of the left frontal lobe one *Cysticercus cellulosæ* was discovered. No changes were noticed in the brain around it.

The *spinal cord* was examined throughout, but no naked-eye changes were observed.

XI.—*A case in which several fragments of Bone were removed from the male Urinary Bladder after disease of the spine had existed for seven years.* By G. Buckston Browne. *Read November* 28, 1890.

THE presence of bone in the urinary bladder is so rare, that when it does occur, the case is worthy of being placed on record. Bone may find its way into the bladder, as the result of mechanical violence applied to the bones of the pelvis. Sir Henry Thompson has removed bone from the bladder, which appeared to have found its way there after long-standing hip-joint disease; but I am not aware that any case has been published similar to the one I am about to describe, where it may fairly be assumed that the bone found was part of the body of a lower dorsal vertebra.

Captain T. E. H., æt. 26, of the Royal Irish Rifles, came to me in October, 1887, with the following history:—He had always been remarkably active, and had won several prizes in athletic competition. In 1880, when nineteen years of age, he suddenly one night had severe pain in the back. In 1883 he consulted Mr. Barwell on account of the pain in the back and groin, and I am indebted to the kindness of this gentleman for the following notes of the patient's condition at the time. Much pain was complained of in the back, chiefly in the lumbar region. The spinous processes of the lower dorsal and upper lumbar vertebræ projected. There was no sign of abscess. The patient looked out of health and anæmic, and complained of frequent micturition (which Mr. Barwell attributed probably to irritation of the lumbar nerves by edges of foramina). The following year the back had ceased to give pain and it was straighter, but the bladder was more troublesome; the urine was clear, pale, and very slightly acid. Later on in the year the spine was virtually well, but the urine was rather cloudy, with a few shreds of "mucus." Mr. Barwell desired to explore the bladder, but the patient declined, as he had to leave with his regiment, and he did not call again. When I saw him four years afterwards, he told me he had done his best to lead a quiet

life as advised by Mr. Barwell, and that indeed he had been obliged to do so, because coming downstairs, or walking downhill, or treading unexpectedly on a stone, caused pain in the back. He gave up cricket, but continued to walk and fish. In 1886, after much pain in both groins, he passed in his urine what he said was like a piece of wax. He now complained of pain after micturition; the act was frequent, and he had passed a little blood. The urine was alkaline, full of pus, and contained much earthy phosphate, together with white opaque ragged flakes of lymph. On two occasions he had passed what he described as white stones, or pieces of wax. Upon examination what was thought to be a small phosphatic calculus was felt in the bladder.

On October 26 Dr. Dudley Buxton administered ether, and I crushed and washed out some irregular masses which in the bladder appeared to me to be of triple phosphate. No very careful inspection of them was made at the time, but as is my custom the *débris* were weighed, put away in a box, and labelled. The patient was much relieved by this operation, and his own expression soon after was that "he felt better than he had been for three or four years." The urine became acid, but it still contained much pus, and this continued in spite of the most thorough and regular washing out of the bladder by various medicated solutions. Thinking that this pus was pyelitic in its origin, the bladder washings were discontinued. I saw the patient again in the following year (July, 1888). He had been exceedingly well, and wished to know if he might accompany his regiment to Alexandria. He had very recently passed a bit of what he called stone. The urine was acid, and now almost entirely free from pus. He returned from Egypt in May, 1889, and all went well until January, 1890, when he began to experience his old vesical trouble again, pain at the end of passing water, and on one occasion he had a severe attack of pain in the bladder and in both groins. He occasionally passed bits of so-called gravel, and naturally always with pain. He had ridden to hounds without inconvenience. The urine had again become turbid and flaky. On March 8 I sounded and felt what I thought was a calculus. Next day under ether I seized it with a lithotrite; it did not crack, but yielded toughly to the pressure of the jaws of the instrument. It was impossible to withdraw the lithotrite until an effort had been made to disengage its jaws from what they had seized, and even then I knew I had something tough and

rough projecting from the blades, which prevented their easy withdrawal and caused some scratching of the urethral walls. I then washed out some *débris* with the usual lithotrity tube and aspirator, re-introduced the lithotrite, brought it out again once more loaded with unusual matter, and after again washing out found the bladder had been completely evacuated. Upon examination the material removed was found to be the cancellous tissue of bone, and upon reference being made to the calculous matter removed in 1887, that also, upon closer inspection than had previously been made, proved to be mainly composed of bone. I last saw the patient in April; the urine was clear, there was no irritation of the bladder whatever, and he was able to ride and lead an active life.

It will be readily admitted that this case is an unusual, if not actually a unique one. I have not found any such case recorded in the books to which I have had access. That fragments of bone are sometimes discharged from psoas abscess due to Pott's disease of the spine is well known, and instances of ischio-rectal abscesses discharging pieces of bone have been published in which the bone came from the spinal column; also the late Mr. Shaw, in the second edition of 'Holmes' System of Surgery' (vol. iv, p. 125), graphically relates a case where without doubt such an abscess discharged itself into the bladder, but I have found no account of bone obtaining entrance in this way into that viscus. Several cases are on record of pieces of bone being coughed up from the lung. Dr. Walshe relates such a case following injury to the spine in the last edition (fourth) of his work on 'Diseases of the Lungs.'

One other matter in connection with this case calls for remark, namely, the removal of bone from the bladder by means of the lithotrite. Bone is tough and not brittle, and does not break easily when crushed between the blades of the lithotrite. The lithotritist, therefore, if he has any suspicion that he is dealing with a piece of bone, or with a stone having bone for a nucleus in the bladder, will do well to proceed with caution, and not allow his instrument to become so engaged with the foreign body that it cannot be released, for if he does he may find himself in an awkward predicament; so much bone projecting from the blades of his instrument that he cannot withdraw it, and he may be obliged to perform cystotomy under very unfavorable conditions.

XII.—*Two cases of Traumatic Hydronephrosis which completely subsided by natural means.* By James F. Goodhart, M.D. *Read November* 28, 1890. *With Table.*

Bertram H., æt. 18, a clerk, was admitted under my care on June 23, 1888. Five weeks before that time he had fallen into a hole, and in doing so had struck his side against a scaffolding pole placed across it. He was much shaken at the time, and suffered a good deal of pain, and he went home in a cab, and went to bed. He was seen by a medical man, who pronounced him sound as regards his bones, and he was free from bruising; but he had a great deal of pain in his side, and across his back. He passed blood in his urine that night; he says that his urine was quite black, and he was also sick that night, and for two days after. The hæmaturia subsided about the same time with the sickness, and for ten days he was free, but he had then a slight return of the blood in the urine, which passed off again in twenty-four hours. Three weeks ago the patient experienced a return of the pain in the right side, in the region of the liver, and across the loin; and he was also sick, vomiting bile. These symptoms lasted a fortnight, and he then for the first time noticed a painless swelling in the right side below the ribs. It was now suggested that an hepatic abscess might be forming, and he then applied for admission into Guy's.

On admission he was pale and rather thin. His easiest posture was lying on the right side—if he lay on his left he had pain. There was a swelling on the right side of the abdomen, extending from the margin of the ribs down to a little below the level of the umbilicus, and extending round to the right side into the back in the interval between the last rib and the iliac crest. In front it extended a little to the right of the medium line. Its lower margin was distinctly defined, and the whole tumour fluctuated. It was free from any pain or tenderness on pressure. His temperature was 99·8°. As regards the other viscera, the right lung seemed hampered, the dulness extending from the fifth rib

in the axilla, and seventh rib behind, the vesicular murmur being impaired over this area. There was also a harsh tearing rub over the third space on this side.

The urine was sp. gr. 1020; acid, no albumen, no blood, no sugar.

On June 25, thinking that it was a ruptured kidney and a cyst in connection therewith, Mr. Lane aspirated and drew off 64 oz. of a rather high-coloured urinous-looking fluid, containing altered blood pigment (see table); it was of sp. gr. 1012; albumen, 2 grammes per litre; no sugar, no blood, no bile, a very slight trace of urea only. Temperature after the operation was 101°. He was much relieved, could lie in any position, and the tumour had completely disappeared.

The next day he was very comfortable. Temp. 99·2°; urine, sp. gr. 1025; slightly alkaline, no blood, albumen, or sugar.

On the 28th he fancied that the tumour was increasing again, and so did we. He had passed 34 oz. of urine in the twenty-four hours, containing 2¼ per cent. urea, no albumen, no blood; girth, 28 inches.

June 29.—Urine, 20 oz.; sp. gr. 1025; quite natural; girth, 29 inches.

June 30.—Swelling steadily increases in size; girth, 29½ inches; urine, 20 oz.; urea, 3½ per cent.

July 2.—Girth, 20 inches. Has passed a smaller quantity of urine the last few days, and had a dull aching pain in the right loin.

July 4.—Was sick at 5 A.M. Swelling harder and more tense.

July 5.—Sick again on commencing breakfast. Girth still 30 inches, but very tight.

July 7.—Mr. Lane aspirated again in the same place, and removed six pints of blood-stained fluid. A pad was placed over the swelling, and the abdomen bandaged tightly. The fluid when examined contained 3 grammes per litre of albumen; sp. gr. 1005; 0·1 per cent. of urea; a considerable quantity of blood; loaded with corpuscles, red and white. Before the operation he had complained for some few days of a numbness in the anterior part of the thigh; it completely passed off after the cyst was evacuated.

July 12.—On the removal of the bandage to-day there is some slight fulness in the right lumbar region; the anterior region is still quite normal. Urine normal. The pleuritic rub on the right side had gone.

July 14.—The swelling has increased in size, and is now again visible externally. A trace of albumen in the urine.

July 16.—Cyst increasing and now tense with thrill. A slight trace of albumen in urine.

July 19.—The cyst is now very tense; for the last few days there has been a trace of albumen in the urine every morning, and to-day there is the reaction for blood by the guaiacum test; the urine was also smoky. From this time till August 11 he went on much the same. At one time I might think the cyst rather more tense; at another, less so. He got about, and went home for a few days at a time.

August 11.—He was aspirated for the third and last time. Five pints sixteen ounces of pale brown fluid were removed, containing 3 grammes per litre of albumen, and 0·1 per cent. of urea.

In ten days' time the cyst refilled again considerably, and it therefore became a question what was to be done. There seemed no limit at this rate to the number of aspirations that would be necessary, and after all we might be no nearer to a cure; and, on the other hand, from the readiness with which the cyst had refilled each time it had been emptied, notwithstanding a most persistent and uncomfortable counter-pressure by means of bandages and pads, it seemed to me highly probable that if the cyst were laid open and drained, a permanent fistula would in all probability result, and that in the end the kidney would have to be removed. This being the case, I did not see that his condition could be worse if we let him alone for a time to see what natural effort would do, and I put this before him and let him decide for himself. He followed my advice and went back to his work, and I have seen him at intervals since.

He left the hospital on September 13, 1888, the following note being made on leaving:—The tumour is much the same as it has always been. The most prominent point is at the level of an inch above the umbilicus, where the girth is 29½ inches. I do not think that the cyst has refilled, or is so tense for the time that has elapsed since the last aspiration, so rapidly as usual.

He looks thin and pale, and has lost nearly 28 pounds during his illness.

He reappears on October 8, having been at Margate since his discharge. His general health is good. The liver dulness to-day starts at the fourth rib, and goes horizontally

round. There is more *lateral* than anterior bulging, as of yore. The cyst is now fairly soft, certainly less tense than before, but the girth round the most prominent part of the tumour is nevertheless 31¼ inches.

November 29.—Has been at work since the last note; has gained weight; the tumour is softer, the girth is 32⅜—probably due to his increase in weight.

February 5, 1889.—He is passing more water now than he did when he was in the hospital. The evident distension of the hypochondrium has quite disappeared, one side being now like the other; perhaps there is a little eversion of the ninth, tenth, and eleventh ribs on the right side. To palpation the tumour is very much smaller, and almost naturally soft, but there is a hardish edge two fingers' breadth from the middle line, and one below the umbilical level. There is very little impulse now from the swelling back into the loin, though there is something between the fingers which feels much like the edge of the liver.

August 20, 1889.—He is now passing a natural quantity of urine, he feels quite well, and I can feel nothing abnormal in his abdomen.

Of the second case I have far less information to give, as I only saw it once:

A little boy, æt. 8 years, fell on his right side on the last day of August, 1887. His mother told me that he passed blood with his urine on the eighth day, and that gradually after that his abdomen began to swell, until it got so large that his waistcoat could not be buttoned. He passed blood in the urine for more than a fortnight. Mr. Watson, of Rochester, under whose care he then came, tells me that at that time he had an enormous cyst in his abdomen on the right side, the whole of that part of the abdomen being dull on percussion and giving a thrill. The size of the cyst gradually diminished, but still remaining three months later he was sent up to me. He still had a large cyst in the right loin extending down to the crest of the ilium, and across the median line in the region of the pubes, but it was flaccid and not well defined as regards the outlines. It gave a well-marked thrill. His urine was now perfectly normal in quality, and his mother thought in quantity also. The flaccidity of the cyst in this case indicated clearly that the fluid was undergoing absorption, and as the child was in good health nothing was done, and nine months later Mr. Watson wrote to me to say that the child was perfectly well.

These cases seem to me clearly to be of the same kind as those which Mr. Godlee recorded in the twentieth volume of the *Transactions* of this Society, and both those and these seem to be of interest from one or two points of view. And in the first place it does not seem to me to be quite clear where the fluid collects. Does it form a hydronephrosis, or is it collected outside the kidney?

Probably the position is not always the same, for in another case that was in my ward at the same time with No. 1 an injury to the kidney was followed immediately by localised pleurisy and peritonitis, and the cystic collection did not follow till six weeks after the accident. However, in these cases, and certainly in the first of them, the fact that the fluid was always strictly localised to the renal region, and also that it collected again so rapidly after each tapping, make it most probable that, like the first of Mr. Godlee's cases, the ureter was ruptured or at least injured and obstructed, and that the collection was a hydronephrosis, and it is because I take that view of its nature that I have in great measure thought it worth while to bring it before this Society.

In the present day the drainage of hydronephroses is no uncommon occurrence, and there are, I know, some cases also where the drainage failing to cure, the operation has resulted in a permanent fistula, and has led in consequence to the more serious measure of removal of the kidney. This was so in one of Mr. Godlee's cases. As I have said, I cannot help thinking that had I resorted to drainage in my first case such would have been the result. But it has often occurred to me to ask myself, and this case made an answer to the question still more pressing—What is the natural history of hydronephrosis? There is no reason to suppose that this affection was much less prevalent in former times than it is now, and yet five-and-twenty or twenty years ago, although we met occasionally with them, all we did was to tap them now and again at infrequent intervals, and they disappeared from view. Clearly they did not die, or we should have been familiar with them as of frequent occurrence on the post-mortem table. Some of the cysts no doubt discharged themselves by the natural channel after a time, but others no doubt got well by natural efforts, just as these cases have done. Hydronephrosis is, I take it, very much a question of blood-pressure; so long as the pressure in the capillary system of the kidney is not neutralised by the pressure of the fluid in the sac in front, so long will the hydronephrosis go on

increasing, and the disease progress. But there is in the large majority of cases a limit to the distensibility of the kidney and its pelvis; this limit reached, the secretion is arrested, the kidney wastes, and the cyst gradually contracts.

From this point of view it is bad practice to treat a case of this kind by repeated tappings, and still more by drainage of a more permanent, or rather complete, kind; because it simply stimulates the kidney to fulfil its function, whereas it is the fulfilment of this function which is the cause of the malady. One or two tappings would be legitimate and proper, with the view of, if possible, favouring the re-establishment of the natural channel, which is quite likely to be now and then effected by the resulting flaccidity of the cyst; but after that I would maintain that the proper treatment of these cases is to let them alone, unless there be any special features about the case, such as unusual pain, inconvenience, or what not, which would justify the resort to an operation.

I will only further say that I am not unmindful that the treatment of hydronephrosis is at the present time a very open question, but it is the question that these cases offer for discussion; it is their chief point; they speak, not I.

Urine Table of Bertram H—.

Date.	Amount.	Sp. gr.	Urea. Per cent.	Remarks.
July 2	21	1022	3	No albumen.
3	14	1025	2¾	„
4	20	1028	3½	„
5	22	1028	2½	„
6	15	1025	2¾	„
7	20	„	2¾	—
8	17	„	—	—
9	25	„	2½	—
10	25	„	1¾	—
11	26	„	2	—
12	26	„	2½	—
13	25	„	—	—
14	28	„	2	Albumen.
15	26	„	—	„
16	24	„	2	„
17	21	—	2	„
18	17	—	2	„
19	24	1026	2½	Albumen and blood.
20	20	—	2½	Albumen.
21	20	1025	2¼	„
22	20	—	—	—
23	24	1028	2½	—
24	19	1025	25⅝	Albumen.
25	—	—	—	—

Date.	Amount.	Sp. gr.	Urea. Per cent.	Remarks.
July 27	20	1030	25⅛	None.
30	—	1025	2½	,,
31	20	—	2	,,
Aug. 1	21	1026	2	,,
2	20	—	2	,,
3	22	1025	2	,,
4	17	1028	2	—
5	—	—	2	—
6	—	—	—	—
7	P	1030	2	—
8	24	1028	2½	—
9	18	,,	2½	—
10	22	1030	2½	—
11	30	1012	2	—
12	17	1028	—	—
13	20	1025	3	—
14	25	1027	3	—
15	24	1030	2¾	—
16	17	1025	3	—
17	25	1028	2	—
18	20	1032	3	—
21	P	,,	3	—
22	25	1028	—	—
23	24	1022	3	—
24	28	1025	2	—
25	28	1028	2½	—
29	P	—	3	—
30	32	—	2	—
31	32	—	2	—
Sept. 1	36	1030	—	—
4	25	1028	2¾	—
7	16	—	—	—
8	25	1026	2½	—
11	—	—	2½	—
12	32	1023	2·1	—
13	25	1026	2¼	—

The urine was examined daily, and no albumen discovered after July 27th.

XIII.—*Two cases of Dermoid Cyst in connection with the tongue.* By Arthur E. Barker. *Read November 28, 1890.*

THIS short paper is offered as a sequel to one on the same subject which I had the honour to read before this Society in June, 1883, and which was published in the *Transactions* for that year. In it were recorded two cases of dermoid of the tongue, from my own practice, and reference was given to all the cases which could be collected at that time from our literature. Since then much has been written upon the subject of "dermoids," and by none more ably than by Mr. Bland Sutton. Since then, too, we have had the discovery by His of the plan of development in the embryo of the thyroid and thymus glands, and his description of the nature and structure of the thyro-hyoid duct has rendered the mode of origin of these dermoids of the tongue easily intelligible, which was certainly not the case before. Indeed, the matter seems now simple enough as regards those tumours which are entirely limited to the middle line of the tongue. I venture to think, however, that some doubt must still surround the question of the mode of origin of those dermoids of the tongue which, like one of the cases now to be recorded, lie distinctly to one side of the middle line. Are all these to be regarded as derived from the lingual duct like those in the middle, or are they, perhaps, the included remains of other lateral embryonic clefts such as the *sinus precervicalis* of His, or of one of the branchial clefts as suggested by Mr. Sutton? Looking to the development of the tongue from the *tuberculum impar*, and the two lateral processes which spring up in front of the *furcula* on either side of the latter, it is a little hard to understand how any of the *lateral* clefts can have anything to do with the origin of the tumours actually *in* the tongue. And yet if the latter are derived from the lingual duct, which is a central structure, how is it that they come to lie excentrically and presumably outside the genio-hyo-glossi and hyo-glossi muscles on the one hand and beneath the mylo-hyoid on the other? It may be, of course, that though out of the middle line they are still really between the genio-hyo-glossi muscles, the latter on one side being expanded over the tumour for one reason or another. But in some recorded cases, and perhaps in the first of the two now to be mentioned, they

DESCRIPTION OF PLATE V.

To illustrate Mr. Barker's case of Dermoid Cyst in connection with the Tongue.

Side view of sub-lingual dermoid of left side before operation (Case of Miss T., from a photograph.)

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have seemed when examined from the mouth to have been seated between the mylo-hyoid externally and the genio-hyo-glossi and hyo-glossi internally, only covered towards the floor of the mouth by the mucous membrane of the latter. Looking again at the development of the tongue from the *tuberculum impar* in front, and the two lateral processes which embrace it from behind, and form with it the V-shaped groove or *sulcus terminalis*, which has the lingual duct at its apex, it is necessary to ask whether the lateral dermoids of the tongue might not be derived from inclusion of some part of this groove during the fusion of the lateral segments with the central portion derived from the *tuberculum impar*. Be this as it may, the record of all cases of dermoids of the tongue must be of interest, and may prove of use in helping to solve some of the points still uncertain as regards the details of their mode of origin.

The two following cases are remarkable, the first on account of its excentric position, the second on account of its great size, and the deformities produced by its pressure on the parts around.

Case 1.—Miss T., æt. 20, came to my house last summer, from Dr. Linden of Notting Hill, for advice about a tumour under the left side of the lower jaw (*vide* Plate V). There was nothing to note about her previous state of health except that she was said to have had attacks of gout, and nothing about her family history.

The swelling now complained of was first noticed about nine years ago as a small lump "on the side of the jaw." About a year after its appearance it seemed to become a little smaller, and since then it had gradually grown, but not much if at all during the last year. It gave no pain, and did not cause any trouble in mastication or swallowing. On palpation the tumour was found to be very soft. It lay in the left submaxillary region. On pressure from below it could be seen to bulge, the mucous membrane on the left side of the floor of the mouth, as if it lay between the mylo-hyoid muscle externally and the tongue internally. It reached from the angle of the jaw behind to one inch beyond the middle line in front, and below it touched the border of the thyroid cartilage.

I had no hesitation in diagnosing this swelling to be a dermoid on account of its history and great softness, and on July 28 I removed it by a median submental incision, as it seemed to be too large for removal from the mouth entire. After

division of the skin and mylo-hyoid muscle, the genio-hyoid muscles were separated and the cyst was at once exposed. Then with the fingers I was able to loosen all its attachments, and gradually to turn out the whole tumour with its sac unbroken. The latter was very thin. So far as I am able to judge it lay on the outer side of the genio-hyo-glossi and hyo-glossi muscles, and between these and the mylo-hyoid muscles.

There was no bleeding, and the wound healed under one dressing by first intention except at the lower angle, where a strand of silk was left for drainage. This, however, was hardly required. The patient went home well on August 9.

The tumour which is now shown was left unbroken until hardened. It is about the size of a sausage, somewhat larger posteriorly than anteriorly. It has very thin walls, and is quite smooth externally everywhere. Its contents were found to be made up of white friable pultaceous material, without hairs or other structures so far as could be ascertained from a limited opening at one end.

Its walls were very difficult to examine microscopically on account of their extreme thinness, but in several of the sections which I have made, now exhibited, the structure is fairly seen. Externally there is a thin layer of highly differentiated wavy fibrous tissue; on this can be seen a layer of subcolumnar or almost cubical cells, then a thick stratum of deeply stained material apparently consisting of more or less degenerated epithelial cells, and upon this a thin film of structureless material which I am inclined to think corresponds to what in the skin would be the epidermis. Next to this comes the pultaceous matter which filled the sac. The structure of this tumour is almost exactly similar to that of those small dermal tumours of the fingers which I have examined.

The next case occurred in the practice of Dr. Wellington Gray at the J. J. Hospital in Bombay. During his furlough, two years ago, he very kindly left the specimen and these photographs (Plate VI) of the patient with me, at the same time furnishing me with careful notes of the case, and asking me to make any use I thought fit of them. The following is an abstract of his notes:

Case 2.—Syed Mahomed, a negro, æt. 35, was admitted into the Jamsetjee Jejebhoy Hospital on December 10, 1886, suffering from a large tumour of the tongue said to be of two years' duration. It began as a small nodule under the tongue

much deformity of the jaws remained, but he could speak plainly.

The tumour was quite symmetrical, and lay between the genio-hyo-glossi muscles. It contained epithelium, fat, and cholesterine, but no hairs could be found after careful search. The cyst well, which I have, was tough though thin, and yielded excellent microscopical sections, from which I have made the drawing seen in fig. 3 (page 71). In my sections the structure was essentially the same as that observed in my own case described above except that the deepest cells were more distinctly columnar, and there was no appearance of the thin internal layer which I took to be a sort of epidermal covering in my own case.

XIV.—*Case of living Hydatid of the Lung, in which aspiration was followed immediately by subcutaneous emphysema, and by suffocation due to the rush of hydatid fluid into the bronchial tubes.* By J. S. Bristowe, M.D., F.R.S. *Read December* 12, 1890.

THE case I am about to narrate is one of hydatid of the lung. This affection is not common in this country, and few of us have had much experience of it. For my own part, the only cases which, until now, have fallen under my care have been those in which suppuration has taken place and hydatid cysts have been expectorated. In the present instance the hydatid was living; and paracentesis, performed in the belief that we had hydrothorax to deal with, killed the patient and induced phenomena which, though not individually rare, collectively are of interest and instructive. It is on this account that I bring the case before the Society.

Spencer L., a boy of nine years of age, was admitted under my care on the 7th October of the present year. He had formerly had measles and hooping-cough, but otherwise appeared to have enjoyed good health down to a fortnight before admission. He was then, without obvious cause, attacked with pain in the left side of the chest, and cough—the pain being aggravated by coughing and by deep inspiration. These symptoms continued in spite of treatment; and the pain latterly becoming somewhat aggravated induced his parents to bring him to the hospital.

He was a thin, delicate-looking boy, complaining of pain in the left side of the chest induced by breathing deeply and coughing, and of slight cough unattended with expectoration. On examining the chest, this seemed well formed; but the left side did not move so freely as the right. On percussion the left side was found to be dull in front and laterally, from the level of the fourth interspace downwards, and over the lower two thirds behind, with high-pitched resonance over the apex in front. It was observed, however, that resonance, due to the stomach, encroached somewhat unduly on the lower part of this side, in front, laterally, and behind. The

breath-sounds at the upper part were normal; but over the dull area they were generally extremely feeble, and indeterminate in character, and there was notable diminution of vocal resonance and fremitus. In front and laterally, indeed, and at the extreme base behind, all such phenomena were wholly wanting. There was no appreciable ægophony anywhere, or definite tubular breathing or friction. The right side of the chest was healthy, excepting that the heart was displaced, and was situated mainly to the right of the median line; dulness due to its displacement and pulsation extending for about an inch and a half to the right of the sternum. The organ was apparently healthy, as also were the abdominal viscera. The urine had a specific gravity of 1030, and was free from sugar and albumen. The temperature was normal, tongue clean, pulse 92, appetite fair.

I regarded the case as one of pleurisy with effusion, undergoing amendment. But I did not myself examine the case very carefully until the 10th, that is three days after admission. The physical signs were then in accordance with the above description; but it was further proved that, an inch below the nipples, the right side measured 12 inches in circumference, while the left measured 11½. The temperature had ranged from 99 to 97, and he still remained fairly well. At this time I discussed the case pretty carefully. The history and symptoms still led me to the belief that the boy had had an attack of pleurisy with effusion, and that the fluid had been undergoing absorption, while the compressed lower half of the lung had as yet undergone little if any re-expression. That the pleuritic effusion had become absorbed to a large extent was shown apparently by measurement, and by the extent to which resonance, due to the stomach, still encroached on the whole circumference of the lower half of the left side of the chest. But I was puzzled, I confess, by the continued displacement of the heart to the right. And in discussing this phenomenon I observed that it was probably due to the presence of a localised pleuritic accumulation in the anterior part of the chest, or possibly might be occasioned by some tumours occupying the mediastinum or left lung. There was no lump, however, in the neck or thoracic wall, nor were there any enlarged veins in either of these situations. I am almost ashamed to say that the possible presence of an intra-pulmonary hydatid cyst did not even cross my mind.

As time progressed no marked change occurred in the boy's condition. From the 15th, however, to the 20th

inclusive, the temperature, though often normal or even subnormal, rose every day above 100°, and on two or three occasions to 101·8°; and occasionally during this time he complained of pain in the left side on breathing.

On the afternoon of the 21st I again examined him carefully, and found the physical signs substantially unchanged. But on comparing the two sides, at the same level as before, the right side was found still to measure 12 inches, while the left had increased to 12¼ inches; and further I was struck with the fact that the dulness on the left side of the chest, although it had not mounted, now extended down to the actual base of the chest. And hence, coming to the conclusion that during the last few days the fluid in the chest had been increasing, I decided to have paracentesis performed.

At 4 P.M. the largest aspirating needle was inserted immediately below the angle of the left scapula to a depth of about an inch and a half. After withdrawal of the trocar there was a delay of a few seconds before the tube from the vacuum-bottle was connected with the canula, during which time two or three drachms of clear watery fluid escaped freely. But on opening the stopcock between the bottle and the canula no fluid whatever flowed into the bottle. At this moment clear frothy fluid began to pour out of the boy's mouth, and in a few seconds, with hardly any coughing, quite three or four ounces were collected in a porringer. His breathing became difficult, his lips blue, and his pulse feeble; he became very restless, and was obviously in great distress. The canula was withdrawn, and the puncture covered with collodion.

No improvement took place, but in the course of two or three minutes subcutaneous emphysema was found all over the left side of the chest, and in front of the neck on both sides (I do not think there was any on the right side of the chest); and on percussion (of course hastily performed) the left side of the chest, in front and laterally, was found to be resonant.

A trocar and canula were at once introduced in the left anterior axillary line, and on withdrawal of the trocar air issued with considerable violence, but again no fluid.

About this time respiration ceased, the heart continuing to beat with fair strength, though very slowly. Artificial respiration was resorted to, and was continued for some time. Its employment caused the discharge of a great deal of frothy

fluid from the mouth and nose, but there was no response, and death ensued in about seven or eight minutes after the first puncture.

Only a partial examination of the body was allowed. There was subcutaneous emphysema over the left half of the trunk as low down as Poupart's ligament, and on the right side as low down as the umbilicus. It was altogether much more evident on the left than on the right side.

The lower lobe of the left lung was firmly adherent by old adhesions over an area of four square inches, situated in the posterior axillary region. Into this area the aspirating needle had passed.

The pleural cavity contained a few ounces of blood-stained fluid. On breaking down the adhesions it became evident that a cyst of some kind existed in the lung. This turned out to be a hydatid cavity, a little less in size than the closed fist. It was collapsed, as also was the hydatid which lay in it. This was single, presented a small opening, through which the trocar had evidently passed, and a rent of some size with ragged edges. The latter may, perhaps, have been caused by violence in the process of removal of the lung. The pulmonary cavity had no definite lining membrane, but its surface presented chronic inflammatory changes. Into it a main bronchus opened by a largish orifice and many other smaller openings, through which water injected into the left bronchus readily escaped. The tissue of the lower lobe was collapsed and void of air. The other thoracic viscera were healthy.

There was a similar, but somewhat smaller solitary hydatid in the right lobe of the liver towards its lower border.

The points of chief interest in this case are, first, the rapidly fatal result of the simple operation of paracentesis; and, second, the rapid development of subcutaneous emphysema. As to the emphysema, I was inclined at first to attribute it to the effusion of air through the wall of the hydatid cavity into the connective tissue of the lung, and thence progressively into the mediastinum, neck, and walls of the chest. I think, however, there can be little doubt that the air passed directly from the hydatid cavity into the sinus left by the aspirating needle, and thence spread first into the connective tissue of the left side of the chest. This is the more likely because the hydatid cyst was firmly adherent at the spot at which the operation was performed; and, further, this accident is known to arise occasionally when a puncture is made through

adherent pleura into lung-tissue, of which an interesting case was recently recorded. I find, on referring to a valuable paper on hydatid disease by Dr. J. D. Thomas, published in the *Australian Medical Journal* for 1889, in which he brings together from various sources a large number of cases of hydatids of various organs, that it is not an uncommon thing on puncturing living hydatids in the lung for a suffocative attack to come on, accompanied by the discharge of large quantities of frothy, watery fluid, and that occasionally under such circumstances the patient dies in the course of a few minutes, as my patient did. It is not difficult to understand the mechanism of this accident. The living hydatid accurately fills the cavity in the lung in which it lies, inasmuch as the cavity is due to the pressure the hydatid exerts, and the consequent gradual erosion or wearing away of the surrounding lung-tissue; and, further, the surface, unlike that of an abscess cavity, is (consequent on its mode of development) more or less sieve-like, or studded with orifices communicating with eroded bronchioles. Hence, while during the healthy state of the hydatid no air can enter the cavity, as soon as the hydatid is punctured or ruptured, on the one hand, its escaping contents readily find their way into the air-tubes, and, on the other hand, air is admitted freely into the cavity. That in my case air accumulated very quickly was shown, partly by the rapid development of emphysema, partly by the rapid appearance of resonance where dulness had previously prevailed, and the violent escape of air when the second puncture was made.

It is clear that the tapping of living hydatid tumours of the lung is attended with serious risk to life from suffocation due to the sudden flooding of the air-passage with the watery contents of the cysts; and hence it is very important that an accurate diagnosis of such cases should be made, and that when diagnosed special surgical treatment should be adopted. I am free to acknowledge that, although there were points in my case calculated to mislead, and which did mislead me, there were points in it which might have suggested to me its true nature, and which would, I think, had the case come under my care in Australia, have guided me to a correct diagnosis. It seems to me that if in any case one comes to the conclusion that he has a case of living hydatid of the lung to deal with he ought to abstain from puncturing it as an aid to diagnosis, and ought not to treat it by aspiration; but that a free opening with removal of bone should be made

in the area in which there is reason to believe that the hydatid is in direct relation with the chest-wall, and that only through such an opening the hydatid should be dealt with. This is the course which Dr. Thomas advocates, and it is apparently the only safe one.

XV.—*A case of Double Empyema: simultaneous drainage of the pleural cavities: recovery.* By Sidney Coupland, M.D., and A. Pearce Gould, M.S. *Read December* 12, 1890.

Mabel V., æt. 7, was admitted into Middlesex Hospital on April 28, 1889, suffering from double empyema. Her illness began suddenly on November 7, 1888, with abdominal pain and vomiting; she was able to go to school on the following day, but in the evening of the 8th the symptoms recurred with such severity that Mr. Coker, of Uxbridge Road, was called in. On November 10 left pleurisy was detected; she then became seriously ill with high fever and signs of double pneumonia as well as pleurisy. On November 23 Dr. Coupland saw her in consultation and gave a very grave prognosis, suspecting acute pulmonary tuberculosis. It may here be said that the previous health of the child had been extremely good, and that her family history showed no taint of tubercle.

She remained in a critical condition for some weeks, and gradually signs of effusion became marked at both bases. On December 18 Mr. Pearce Gould aspirated the left chest and removed a pint of laudable pus; eight days subsequently he removed by aspiration a pint of pus from the right side and 6 oz. from the left. On January 16, 1889, Mr. Coker removed 3 oz. of pus from right pleura and failed to find any fluid in left pleura. On January 18 Mr. Pearce Gould saw the patient and advised against drainage, in the hope that the case might be dealt with by aspiration. On January 24 four ounces of pus were removed from the left pleura. She now passed through an attack of catarrhal jaundice, the pleural condition remaining unaltered. In the months of February, March, and April aspiration was performed four times by Mr. Coker, twice on both sides and twice on the left side only.

On admission to the hospital, Mabel V. was in an extremely emaciated and anæmic condition. Her chest was small and narrow with very little expansile movement, there being slight recession of the lower intercostal spaces on each

side during inspiration. On comparing the two sides of the chest the left was obviously the smaller. There was resonance over both apices extending on the right front to the upper border of the sixth rib, in the axilla to the lower border of the fifth rib, and posteriorly to the angle of the scapula. Below this level there was absolute dulness. On the left side in front the level of dulness began at upper border of fifth rib, passed obliquely upwards to the third rib in axilla and to the scapular spine behind. On auscultation, weak distant breath-sounds were heard over the dull area on the right side, together with fine friction-sounds in the axilla and at the angle of the scapula. Vocal resonance was for the most part diminished, except at the scapular angle, where the voice sounds had a ringing character, and where also whispering pectoriloquy was audible. On the left side the signs were nearly identical, but in addition there was bronchial breathing over the lower part of the scapula. The apex-beat of the heart was in the fifth left interspace $\frac{3}{4}$ inch within the nipple line: the sounds were clear. Pulse 104, small and soft. Temperature normal. Resp. 30. Urine free from albumen.

The child had a fair appetite; slept well; she suffered from a slight spasmodic cough chiefly at night, and sweated rather freely towards morning. Her condition did not improve, but, on the contrary, temperature, pulse, and respirations rose, the sweating became more profuse, the cough more troublesome, and dyspnœa marked.

On May 27 Mr. Pearce Gould opened the right pleura, removing an inch or so of the eighth rib in posterior axillary line. On opening the cavity extreme cyanosis occurred and the child became very faint: 10 oz. of thick inodorous pus escaped; the pleural sac was gently irrigated with warm sublimate solution 1—5000. A large drainage-tube was inserted, and a dressing of alembroth wool was applied. She was rather faint on returning to the ward, but recovered in two hours and then fell asleep, breathing easily. The patient was relieved by the operation; the temperature and respirations fell slightly, but the pulse remained about the same (130). There was a free discharge of pus: the night sweats continued.

On June 5 the left pleura was opened in a similar way, a portion of the seventh rib being removed; 18 oz. of pus escaped: a large drainage-tube was inserted. She was again collapsed after the operation, but this was followed by considerable febrile reaction, the temperature for ten days being

markedly remittent, the pulse rose to 144, and the respirations to 50.

On June 10 it was noted that the discharge from both pleuræ had greatly diminished. Vesicular breathing was heard below the angle of scapula on each side, and there was a great increase in the expansile movement of the chest.

The temperature fell to the normal, and remained so on June 19. She steadily gained in weight.

On July 1 the drainage-tube was removed from the right pleura, and the wound was firmly healed by July 8.

On July 20 the drainage-tube was removed from the left pleura, and that wound quickly healed. She left the hospital early in August.

Since her return home she has been in excellent health, and has appeared to be as strong as before her illness. She is now a well-nourished child, runs about as freely as her brothers and sisters, and shows no signs of diminished lung-capacity. The chest is symmetrical,* a little flattened from before back at the base; the chest movements are fairly good, and the percussion and auscultation signs are normal. The heart's impulse is in the normal position. In fact, except for the scar on each side of the chest there is little indication of her former very grave illness.

Remarks.—The pleurisy in this case appears to have come on in connection with a double pneumonia. This sequence is well known to be very frequent, and the acute and very severe onset of our patient's illness is more in harmony with this view of the case than any other; and, as so often happens in such circumstances, the effusion quickly became purulent. At first the child seemed to improve greatly under aspiration, and as the quantity of pus removed each time diminished, we hoped that this would be a sufficient surgical treatment, and we advised against pleurotomy. But as time went on it became clear that aspiration would fail, and that unless we resorted to drainage of the pleuræ our efforts to save the child's life would be unavailing. For a long period we were unable to gain the consent of the parents to any further operation, and that is the explanation of the long time

* The entire absence of any flattening on either side, and the completeness of the recovery, notwithstanding the length of time during which the lungs were compressed, may perhaps be explained by the fact that both were affected to about an equal extent. Their re-expansion may therefore have proceeded *pari passu*. Whatever the explanation, it is certainly unusual for such a complete re-expansion to take place within twelve months of operation, in the ordinary cases of unilateral empyema.

that the case was allowed to run on before drainage was effected.

We decided not to open the two pleuræ at the same time, but to allow a few days to elapse between the two operations, because we feared that the shock of the double operation would be too severe, and we were also in doubt whether it might not be followed by fatal embarrassment of the breathing.

Our first fear was justified, for after opening the right pleura the child was greatly collapsed, and any further operation would have been certainly fatal. Similar collapse occurred after the second operation, but it was not quite so intense. Another time we should prefer to drain the left pleura first, hoping by that means to relieve the pressure upon the heart as well as upon the lung, and so put the patient in a better position to bear the second operation.

It has been authoritatively stated that double empyema cannot be treated by simultaneous drainage, as the opening of both pleuræ would be necessarily fatal. But an exception has been made in favour of small localised or loculated empyema. *En passant* we may remark that there is no essential or fundamental distinction between a localised and a general empyema, but only one of degree. The patient we have shown to-night—and others—however, afford an absolute refutation of the statement just alluded to. The error has arisen from regarding the opening of an empyema as analogous to an incision into a healthy pleura, but the conditions are quite distinct. To open freely both healthy pleuræ would lead to fatal collapse of lung; to open a double empyema cannot lead to collapse of lung, and is sure to be quickly followed by more or less expansion of lung. The fact is that the cavity of an empyema probably never corresponds to the entire potential cavity of the pleura, but is always limited by adhesions between the lung and the parietal pleura, and these adhesions prevent any further collapse of lung when the cavity is opened to the air. It is the presence of these adhesions which falsifies the distinction drawn between a "localised" and a "general" empyema as affording a guide to surgical treatment. It is obvious that there is no greater tendency for the lung to collapse if only one pleura is opened than if both are opened, and it is a matter of common experience that the free opening of a unilateral general empyema is not attended by collapse of the lung, but, unless the conditions are very adverse, by speedy expansion of the lung and in-

creased respiratory power. We are not aware of any circumstance which would render this respiratory relief less certain to occur when both pleural cavities are drained (for empyema). Of course, we need hardly point out that this does not apply to double thoracoplasty, for that operation entails a very grave interference with the power of expanding the chest, and if extensive and double must almost of necessity be fatal.

We think the very satisfactory recovery of our patient is worthy of note. We feared that after so long a time (nearly seven months) the lungs would have been so contracted and bound down that only a little expansion would have occurred; but in this our expectation has been altogether surpassed. The growth of the patient is probably the chief element in effecting such a complete recovery.

To formulate our conclusions we should say—

1. That the occurrence of double empyema, instead of being a bar to treatment by drainage, renders the need for such an operation more urgent, on account of the greater embarrassment it causes to respiration and circulation.

2. That aspiration should be practised as a preliminary procedure, in the hope that at any rate some contraction of the abscess cavities may result from it, and further adhesions of the pleura form.

3. That it is better to allow a few days to elapse between the two operations.

4. That if this delay is for any reason impossible, the two empyemata should be carefully aspirated a few hours before the operation. By this means the shock produced by the sudden removal of pressure from the lungs is got over, and the simultaneous drainage of the two pleuræ is robbed of its chief danger.

5. That double empyema treated by free drainage may be followed in children by very complete recovery.

Other cases are on record which support these conclusions, and we may be permitted briefly to refer to them.

In the *Lancet*, 1888, vol. ii, p. 114, is reported a case under the care of Dr. Blunt in the Leicester Infirmary. The patient was a boy, æt. 5¾ years, with double empyema. The right pleura was opened on March 3, a small portion of one rib being removed, and between 20 and 30 oz. of pus were discharged. On March 8 the left side was opened, without removal of rib, and 8—10 oz. of pus escaped. Before the operation the right chest was universally dull, and the left

base was dull up to the angle of the scapula. Convalescence was interrupted by a right apex pneumonia, but ultimately the boy made a perfect recovery. The operations were performed by Mr. Okell.

More recently, Dr. Mitchell Bruce and Mr. Morgan have recorded (*Lancet*, 1890, ii, p. 124) a case which was under their care at the Charing Cross Hospital. The patient was a boy, æt. 6 years, who on his admission to the hospital had been ill for eight days with sore throat and pneumonia. The left side was dull up to the second space in front, and the right up to the angle of the scapula. He was treated by aspiration. On the first occasion 8 oz. of clear fluid were removed from left pleura; then 22 oz. of pus from the right side, and subsequently 4 oz. of pus from the left side. On April 18 Mr. Morgan opened the left side and evacuated "a very large quantity" of pus. On April 25 12 oz. of pus were removed by aspiration from the right pleura, and on May 1 the right side was drained. All the symptoms subsided; the boy made an excellent recovery, and when seen a year later the heart was found in its normal situation, and breath-sounds were plainly audible over the whole chest.

Dr. Fr. Huber records two cases (*Trans. American Pediatric Soc.*, 1889).—1. B. S., male, æt. 14, double pleuro-pneumonia following cold. On the twenty-seventh day of his illness the right pleura was aspirated, and "more than a pint of pus" was removed. Six days later the left pleura was opened, and "large quantities of pus" were evacuated. Two days subsequently the right pleura was opened, and a "large amount of pus" escaped. The boy recovered, and three months later his general condition was excellent.

2. N. W., æt. 5½, double pleuro-pneumonia, with acute empyema on the right side, which was opened; ten days later the left pleura was drained, and "more than a pint of pus" escaped. This child also made a good recovery.

Dr. Huber also mentions two other cases: in one the affection followed typhoid fever; in the other it is stated that the patient was a child æt. 6 years. Both patients recovered. At the end of Dr. Huber's paper references are given to seven other cases, the records of which we have not been able to refer to.

Dr. G. R. Westbrook (*New York Medical Journal*, Nov. 1, 1890) relates the case of F. M., a female, æt. 4, taken ill on Feb. 15. On the 22nd right pneumonia was diagnosed; on March 5 pus was found in the right pleura, and next day the

side was opened and drained, a pint of pus being liberated. March 12, 18, 27, and April 12 the left pleura was aspirated; 4, 2, 6, and 10 oz. respectively of pus being removed. On May 6 the left pleura was opened, and 8 oz. of pus evacuated. From this operation there was considerable shock. The child recovered, and it is stated that three months later the percussion and auscultation signs were normal.

Dr. Churton (*Clin. Soc. Trans.*, vol. xv) has recorded a very interesting case of double hæmorrhagic pleurisy ending in empyema, in a man æt. 38. This case ran a peculiar course, extended over 1½ years, and terminated fatally.

Drs. Broadbent and Cheadle, in the *Med. Press and Circular*, 1878, relate the case of a married woman, 31 years of age, pregnant with her fifth child. Her illness began by catching cold. On August 13 the right pleura was aspirated, and 25 oz. of pus withdrawn. On August 14 left pleura aspirated, and 18 oz. of pus withdrawn. On August 19 right pleura again aspirated, and 22 oz. of pus obtained. The fluid did not reaccumulate, and the patient made a good recovery.

Mr. J. T. Sangster (*Lancet*, 1880, vol. ii) records the case of G. T., æt. 2, who was seized with broncho-pneumonia. Subsequently fluid was found at both bases. The right pleura was drained, a "considerable quantity" of serum and pus escaping at the time of the operation. Five days later the left pleura was aspirated, 2 oz. of pus being obtained. Shortly afterwards 6 oz. of pus was removed by a second aspiration. There was no further secretion of pus, and the child made a good recovery.

This case and Dr. Broadbent's are of special interest, as showing that the affection may sometimes yield to treatment by aspiration, and even in an adult.

XVI.—*A case of Empyema in which a communication was established with the Œsophagus.* By Arthur Francis Voelcker, M.D., B.S. *Read December* 12, 1890.

THE case I have the honour of bringing before the notice of the Society is that of a boy, æt. $6\frac{4}{12}$ years, who was admitted into the Hospital for Sick Children, Great Ormond Street, on November 23, 1888, under the care of Dr. Cheadle, to whose kindness I am indebted for permission to make use of the case.

According to the mother's account, the boy was quite well till November 11, 1887, when he complained of pain in the left side and coughed a good deal. He was put to bed, and had been there nearly all the time up till admission. He had been gradually getting worse. In March, 1888, he spat up some blood mixed with phlegm, which was offensive, and this recurred about fourteen days before admission. Beyond a history of phthisis in the paternal grandfather, the family history and the boy's previous history were unimportant.

On admission he complained of cough, expectoration of blood and pus, night sweats, and wasting.

The boy is emaciated, pale, puffy about the eyelids. Fingers, toes, and nose clubbed. Temp. 101°. There is frequent cough, profuse offensive expectoration. Considerable flattening of the left side of the chest, dulness all over the left side, right side resonant. Breath-sounds very weak all over the left side except at the apex, where they are tubular. No adventitious sounds are heard. On the right side the breath-sounds are natural. The h. a. b. is in the fourth left space just inside the nipple line. Liver felt 2 f. b. and spleen felt 3 f. b. below the costal margin.

An aspirating needle was introduced below the angle of the left scapula, and 2 oz. of thick offensive pus withdrawn. Six days later a portion of the fifth left rib was resected, several ounces of offensive pus escaped, and the lung was found adherent anteriorly, so a counter opening was made by resecting part of the ninth rib more posteriorly. The wound was irrigated, and then dressed with blue wool. After the

operation the boy improved very much, the fœtor of the expectoration almost disappearing the day after the operation. The boy progressed favorably till January 21, 1889, when he had a slight attack of faucial diphtheria.

On January 30, 1889, the discharge was more profuse, and patient was ordered iodine water irrigations. An examination of the left side of the chest showed marked flattening, dulness, bronchial breathing, and no friction. There was no albumen in the urine. By February 16, 1889, the discharge was so slight that the wound was only dressed every third day. The boy had improved much, and was sent to the convalescent home at Highgate. Towards the end of May the boy got worse, and was sent back to Great Ormond Street.

On June 1, five minutes after patient had had some milk to drink, his empyema was dressed, and on removing the dressings about 2 oz. of partly curdled milk were found in them and escaping from the wound. On June 4, fluids swallowed appeared in half a minute at the wound, and on June 6 in five seconds. The wound was now dressed after every meal, and patient was ordered 30 gr. of boracic acid with each 3 oz. of food; but this caused vomiting, and was omitted. The discharge became less again, and the boy improved, and by the end of September only liquid food appeared at the wound.

On October 4 the wound became inflamed, and the boracic lotion used for syringing the wound did not run through freely. Patient was then given all his food in a solid form, the milk and beef-tea being soaked up in bread; patient was only allowed aërated distilled water to drink. Under this treatment he improved rapidly, gaining 2¼ lbs. in fourteen days, although the temperature was rather hectic.

On January 20, 1890, the discharge, though slight in amount, was very offensive, and on January 25 the posterior sinus was dilated under chloroform. A probe could only be made to pass from one opening to the other. During the operation patient brought up about ½ oz. of blood-stained frothy fluid. The discharge continued offensive and profuse, but at the end of February got less, and nothing taken by the mouth appeared at the wound except water, and that only occasionally.

The boy was again sent to Highgate, but on March 4 food again appeared in the dressings, and on March 11 patient was readmitted to Great Ormond Street. He was now much

worse, much emaciated and very weak. On drinking water nearly all of it came through the wound, preceded by a considerable quantity of offensive pus. No expectoration, but the boy said that while at Highgate he spat up some pus. Patient was ordered nutrient suppositories and enemata, and only allowed aërated distilled water to drink.

On March 13 a trace of albumen was found for the first time in the urine, but no casts.

On March 15 Mr. Pitts advised that gastrostomy should be performed at once. Ether was administered, and Mr. Pitts made the usual incisions through the skin, muscles, and peritoneum, and came down on a brown solid body which did not move with respiration, and was found to be firmly adherent to the surrounding parts. A small portion was removed, and proved on microscopic examination to be liver. Mr. Pitts did not consider it advisable to search for the stomach, or even to pass a tube down the œsophagus. The wound was stitched up, and patient put back to bed. He passed a good night, and was comfortable during the next day, but during the night complained much of thirst, which was relieved by enemata of 5 to 10 oz. of water every three or four hours. Patient was fed by nutrient suppositories and enemata every two hours.

On March 18 a little beef jelly given by the mouth did not return through the wound. At 12.45 P.M. patient seemed as usual, and was asking for something to drink, when he suddenly became almost pulseless, and died at 1 A.M. About half an hour after death a considerable quantity of brownish fluid (beef essence, &c.) escaped from the wound in the chest.

The *autopsy* was made forty-one hours after death. Body much emaciated; weight 25 lbs. Rigor mortis present. On removing the anterior thoracic wall both pleuræ extensively adherent, especially on the left side. Left lung very much smaller than the right. On stripping back the adhesions they are found to become very much firmer at the line of the anterior sinus, and from here backwards require the free use of the knife for their separation. No distinct sinus can be made out from the wound towards the œsophagus.

Over the heads of the fifth and sixth ribs is an excavation in which bare bone is felt, and over the head of the ninth rib is a similar excavation. The pleura here is almost cartilaginous in consistence. There is some superficial erosion of the left side of the bodies of the fourth, fifth, and sixth dorsal

vertebræ, and in the dried specimen the stellate ligaments have disappeared on the left side from the sixth, seventh, and eighth ribs. The left side of the thorax has fallen in much as low as the sixth rib, and there is a very well-marked lateral curvature of the spine.

Lungs.—Right emphysematous, but otherwise natural. Left much shrunken, and is rather smaller than the lower lobe of the right lung. Slaty grey in colour, and has a leathery semicrepitant feel. No solid masses felt in it. The pleura is adherent, thickened, and honeycombed.

A soft tube was passed down the œsophagus, and two oval openings, one ¾ inch above the other, were found on the left side of the œsophagus; each aperture was about 6 mm. in diameter. These openings are at the level of the eighth and ninth dorsal vertebræ. They are lined with pale striated membrane, looking exactly like the mucous membrane of the œsophagus. No caseous glands seen near the openings, but a little higher up on the right side are some lymphatic glands, one of which is caseous. Stomach natural. Intestines natural. Mesenteric glands rather large. No caseation. Liver 20·5 oz., considerably enlarged, fatty, and congested. Spleen enlarged, 2·8 oz., pale, firm. Kidneys 2·9 oz. each, pale; slight parenchymatous nephritis. No waxy change seen in sections of liver, spleen, kidney, or intestine with the microscope, even when stained with iodine or methyl violet.

The above case illustrates well some of the results of a neglected empyema. It is probable that an empyema had existed for a year before admission, and that it had already partly discharged itself into the lung. When the empyema was opened, there was evidence that the cavity was contracting, and no doubt adhesions not only prevented the lung from expanding, but also prevented free drainage by shutting off collections of pus which caused erosion of the ribs and vertebræ, and ultimately of the œsophagus. It might perhaps be urged that the empyema started from some mischief in the œsophagus. Thus, a foreign body might have lodged in a diverticulum and ulcerated out from it, and at first sight the condition of the two openings in the œsophagus lends some support to this view, the lining exactly resembling the mucous membrane in the œsophagus; but the facts that there are two openings, that there was no evidence of any communication with the œsophagus till six months after the empyema was opened, the position of the opening, and the absence of any history of œsophageal trouble, render this

theory very improbable. The existence of some caseous glands in the posterior mediastinum led me to look carefully at the post-mortem for any evidence of a gland rupturing into the pleura and œsophagus, but of this I could find no evidence; so that I am inclined to adopt the first view as the correct one.

It is interesting to note that, in spite of the prolonged suppuration and the enlarged liver and spleen, there was no albuminoid change in any organ, nor did any casts or albumen appear in the urine until the last few days of life.

The rarity of the complication makes it unnecessary to say much of its treatment, but I would point out the good effect of avoiding decomposable liquid foods, such as milk and beef-tea given by the mouth, and of substituting for them solid food and aërated distilled water. Had gastrostomy been practicable this might have prolonged the child's life, but it will be well to bear in mind the possibility of the occurrence of adhesions in the upper part of the abdomen which may interfere with the performance of the operation.

XVII.—*A case of Abscess of Lung probably of Pneumonic origin: drainage and recovery.* By HERBERT P. HAWKINS, M.B. *Read December* 12, 1890.

T. S. L., æt. 14, was admitted into St. Thomas's Hospital on July 11, 1890, under the care of Dr. Gulliver, who kindly gave the case to me.

He had been ill for three weeks before admission, but the exact nature of this illness is not quite certain, because the Superintendent of the Boys' Home in which he was living thought that he was exaggerating his complaint, and no medical advice was obtained. The onset, however, seems to have been fairly severe: he suffered from shivering, cough, and pain in the left side; he used to lie about rather than go into school, and frequently felt cold, so that his companions used to cover him with rugs.

From this account I think it is probable that the primary disease was pneumonia at the base of the left lung.

He had had influenza at the beginning of the year, and a slight attack of rheumatism the year before. With these exceptions he had always been a healthy boy, and he was quite strong up to the time of onset of the present illness. There was no family history of tubercle or syphilis.

On admission he was pale, with flushed cheeks, and was probably already somewhat wasted. He was breathing rapidly (46 per minute) and seemed excessively ill, so that, judging from his appearance, anyone would have expected to find the signs of gross disease in his lungs. On examination, however, there was absolutely no physical sign of pulmonary disease beyond a three-inch circle of slightly impaired resonance in the left axilla, the centre of which was on a level with the nipple, and over this area the breath-sounds were enfeebled but not altered in quality. The skin in the left axilla was very sensitive, so that he winced under the pressure of the stethoscope. The measurements of the two sides of the chest were probably normal, the left side being a quarter of an inch less than the right, and the heart was not displaced.

For the next fortnight he steadily lost ground, losing flesh rapidly, suffering from well-marked hectic fever, the daily variation being between 99° and 103°, much troubled with long attacks of painful coughing, and sweating profusely at night. The sputum was not only extremely fœtid, having the characteristic odour of necrosed lung-tissue, but, what was more important in diagnosis, it was variable in amount, so that he would pass several hours without any expectoration, and then would produce two or three ounces of stinking pus within a few minutes: sometimes it contained streaks of red blood.

During this fortnight it was noted on one or two occasions that the breath-sounds over the area of impaired resonance had a faint cavernous quality. But with this exception there was no fresh physical sign in the lungs; there was never any bubbling or crepitation, and even the cavernous breathing was at its best extremely faint, so that it could only be heard during the stillness of night.

There could be little doubt as to the existence of a suppurating cavity in the left lung, probably separated from the chest-wall by a considerable thickness of healthy lung-tissue.

On July 29, in a violent attack of coughing, he brought up about 4 oz. of fœtid pus. The cavity being now presumably empty and the cavernous breathing being at its loudest, the opportunity was taken of marking out on his chest the exact outline of the cavernous area, and in this area a mark was made indicating the spot where cavernous breathing was best heard.

After waiting a few hours in order to let the cavity again fill with pus, a point was taken one inch below the mark of maximum cavernous breathing (which I thought would give the best chance of hitting the cavity), and a large aspirating needle was passed inwards and slightly upwards. Pus was gained at a depth of 2—2½ inches from the skin, and about half an ounce of the same offensive pus as he had previously been expectorating was drawn off.

Mr. Clutton then kindly saw the case for me. A piece of the sixth rib was removed between the anterior and middle axillary lines, the pleural surfaces being found to be adherent, as was expected. A small and superficial incision was made in the lung, a director passed in the direction which I indicated, releasing about a drachm of pus, and a 3-inch drainage-tube inserted. Bleeding was free but not alarming, and some blood came out of his mouth.

Three days later he was found to have a general empyema on the left side, doubtless owing to disturbance of the pleural adhesions during the necessary manipulation. This was at once drained by free incision in the ninth space behind the angle of the scapula, this somewhat unfavorable spot being chosen in order that it might be as far away as possible from the anterior wound and its discharge of putrid pus.

Expectoration and cough ceased absolutely from the time of the operation, but for the next week or so he remained extremely ill.

About August 15 general improvement began and proceeded rapidly. The empyema ran as favorable a course as could possibly be expected, and the drainage-tubes from both openings were removed by the middle of September, six weeks after the operation.

On October 25 the boy had gained a stone in weight, the left side of his chest had fallen in well, measuring 1¼ inches less than the right side; the heart had been drawn upwards for at least an inch, and there were no physical signs of disease of the lungs.

As to the necessity of operation there can be no doubt. I do not suppose that a cavity capable of holding 4 fluid ounces admits of natural cure, and I think that the cavity was increasing in size.

In speaking of the exact pathological condition there is more room for hesitation. I do not think the disease could have been tubercular in origin: its onset was too acute, its duration too short, the cure too complete, and no tubercle bacilli could be found in the sputum.

There was no history or evidence of the entrance of a foreign body into the air-passages.

There is a possibility that the abscess was originally formed round a hydatid, the collapsed cyst being removed by expectoration before admission of the patient; but cases of pulmonary abscess so arising, I believe, are almost always marked by the sudden expectoration of a large quantity of pus at the very commencement of the illness. Here, however, no such history could be obtained; the expectoration of pus began gradually and increased steadily in amount, and no hooklets or pieces of membrane were found after admission.

I can only suppose that it was originally a case of lobar pneumonia, and that this resulted in a circumscribed abscess, which, small at first, steadily increased in size by progressive

necrosis of the surrounding lung-tissue; and it is possible that such a very rare termination of pneumonia in a healthy boy may be explained by the unusual neglect with which he was at first treated.

XVIII.—*A case of Intussusception and Volvulus in two places of the small intestine.* By Thomas Whipham, M.D., and G. R. Turner. *Read January* 9, 1891.

Ellen M., æt. 29, a cook, was admitted into St. George's Hospital on January 29, 1890, under the care of Dr. Whipham, suffering from acute intestinal obstruction of about twenty hours' duration. Her family history was good.

The patient had suffered for many years from indigestion, but beyond that there was no history of serious illness. Her bowels had always acted properly until three weeks before she came under observation, but since that time they had been somewhat sluggish, not more so probably than is usual in persons confined to bed as she had been. The catamenia were stated to have been somewhat irregular, sometimes recurring at intervals of rather over a month, at others missing a period altogether. In the autumn of 1889 she suffered from "inflammation of the back."

Three weeks before admission she was attacked with influenza, and at the time of, or very soon after the onset of, the disease she experienced an extremely acute pain in the region of the umbilicus. This pain lasted only about ten minutes, but while it lasted it was excruciating. It passed away, leaving her comfortable save for frequent vomiting of her food, both liquid and solid. No medicine appeared to control the sickness.

At 4.30 A.M. on January 28 her bowels acted freely, and during the act of defæcation she again felt intense pain in her belly—in the umbilical and lumbar regions of the right side. She described this pain as being precisely similar to that which had occurred at the beginning of her illness. The patient informed us that the doctor in attendance on her said in her hearing that it had been reported to him that there was blood in the motion passed. The pain in the belly continued, and at 9 P.M., sixteen hours and a half from the onset, some morphine was administered, which speedily relieved her pain for a time; during the night it recurred

and persisted, but rather less acutely, accompanied by vomiting and hiccough until her admission at 1 P.M. on January 29.

On admission the patient had dry, red lips, a flushed face, and a dry skin, but lacked much of that anxious expression which is so common in bad cases of intestinal obstruction. Her tongue was moist and but slightly coated. She was restless and turned from side to side; sometimes she lay on her back with her legs drawn up, sometimes with them extended.

The belly was much distended and very tender, especially so on the right side, and on percussion slight dulness was found there.

The urine obtained soon after admission was high-coloured; it was passed with difficulty and a scalding sensation.

Her pulse was quiet, 96, and of good strength.

It was determined to give no opium until a consultation could be held with the surgeons, and accordingly at 5.30 P.M. Mr. Dent and Mr. Turner, with Dr. Champneys saw the patient. Dr. Champneys found the uterus anteverted and not freely moveable; the cervix somewhat soft and presenting forwards; in the left region of the pelvis an indefinite swelling, which was tender.

After consultation it was thought well to administer a copious enema of warm soap and water, the result being an evacuation of dark bloody fluid, extremely offensive, and a small quantity of fæces.

The diagnosis lay between an intussusception and a twisted pedicle of an ovarian cyst, the former being indicated by the history of blood in the last natural evacuation of the bowels, the latter by Dr. Champneys' vaginal examination. It was felt, however, that the history of blood in the motion was so incomplete that it was practically without value. The question of volvulus or constriction by a band in abdominal cavity was considered, but no definite conclusion was arrived at as to the real cause of the obstruction. One thing was certain, viz. that the patient was in a most dangerous condition, and that an operation was indicated at once while her strength remained good.

As soon as possible, therefore, she was removed to the operation theatre.

The following is Mr. G. R. Turner's account of the operation:

The bladder was emptied; the pubes shaved; the abdomen washed and carbolised. A median incision some five inches long was made above the pubes, which was followed by the

escape of some turbid serous fluid. On the introduction of the hand, the uterus of about the size of the third month of pregnancy was recognised. In the middle line above this lay a coil of greatly distended small intestine. This on examination proved to be part of a volvulus in which there appeared to be not only a twist about the mesenteric axis, but also of one loop of the intestine round its neighbour. In the unavoidable handling of the distended part a split of the stretched peritoneum for about half of the circumference of the gut occurred. The volvulus was unravelled, and the rent of the peritoneum closed by a Lembert's suture. There was some slight subperitoneal extravasation of blood in the distended part of the volvulus, and the gut below the twist was quite collapsed. A second volvulus was then discovered higher up and was likewise unravelled. This latter twist was about the mesenteric axis of the gut alone. There was not the same distension and collapse of the upper and lower portions respectively, as in the first found volvulus. Further examination in the lower right hypochondriac region of the abdomen revealed the existence of an intussusception of the small intestine. To bring this into view the abdominal incision was prolonged to some three inches above the umbilicus. No difficulty was experienced in releasing the intussuscepted portion, which consisted of about nine inches of deeply congested bowel, almost black from extravasation of blood, but with the peritoneal coat still lustrous. On being released this dark portion of the gut at once markedly improved in colour and appearance. The question as to the propriety of removing the damaged part of the intestine was for a moment considered, but the exhausted condition of the patient forbade any further operative proceedings. The abdominal wound was therefore closed in the usual manner: the peritoneum flushed with a warm weak (1 in 20,000) solution of corrosive sublimate, and a glass drainage-tube introduced. The operation throughout was performed with antiseptic precautions, but no spray was used. It was of necessity long and tedious.

The patient was ordered a subcutaneous injection of morphine (one third of a grain) and to be fed by the rectum, the enemata to contain small quantities of brandy and to be repeated every two hours. She passed a sleepless night, but there was no vomiting.

On January 30, at 10 A.M. she was much exhausted, and a drachm of ether was subcutaneously injected. By the middle

of the day her pulse was scarcely perceptible at the wrist and she had begun to mutter; at 3 p.m. she was delirious and very garrulous, with cold clammy extremities, and at 5.30 p.m. she died.

The autopsy was made twenty-two hours after death. The abdominal wound was eight inches in length, and commenced three inches above the pubes in the middle line. There were some old pleural adhesions on both sides, and some recent congestion of the lower and back parts of the lungs. The endocardium was blood-stained, but the heart was in other respects healthy. In the region of, and for some distance around, the wound, the peritoneum was covered with recent buff-coloured lymph; the other parts of the peritoneum were much congested.

The intestines, more especially the jejunum and the upper part of the ileum, were matted together with recent lymph. Sixty inches from the pylorus was a thickening of the coats of the intestine, and immediately below it for about five feet the gut was much bruised and very dark in colour. Some of it had an almost gangrenous appearance. On laying open the bowel a polypoid growth from the mucous membrane of about the size of the end of a man's thumb was found at the commencement of the damaged portion of the gut. About fifty-two inches from this polypus was situated the rent in the peritoneum which had been united by Lembert's suture; and there was no opening into the bowel at this point; six inches beyond the suture about six inches of the gut were quite collapsed, then came a dilated portion, and beyond it another four or five inches of collapsed bowel.

The uterus was of about the size at the third month of pregnancy, it rose to within half an inch of the pelvic brim. It contained a quantity of blood-clot and some fluid blood; in the right ovary was a true corpus luteum.

Intussusception caused by polypus of the intestine is itself rare; according to Mr. Treves, but 5 per cent. are due to this cause. We have been unable to find a case accompanied by volvulus of the small intestine, though volvulus about the mesenteric axis of the gut is common in cases of strangulation through apertures or by bands. The jejunal volvulus was comparatively slight, and presumably more recent than the ileal one, in which the very rare condition of twisting of one coil of intestine round the other was met with. These twistings were, we presume, secondary to the intussusception; the history of the blood in the motions at an early period of the case

would seem to show this. Later on, the obstruction at the seat of the volvulus being complete, no blood from the intussusception could have been passed per anum. The difficulty—even the impossibility—of a certain diagnosis in some cases of intestinal obstruction is well known. Here there was an enlarged uterus in an unmarried girl, a very uncertain history of blood in the motions, and no intussusception swelling to be felt. The case also illustrates how thorough the abdominal search and exploration should be, lest the causes of obstruction be multiple and one of them overlooked. After finding volvulus in two places one might readily have been satisfied and have sent the patient back to bed with an undetected intussusception; the mere existence, however, of so rare a condition would have strongly suggested some other primary lesion.

It was very unsatisfactory and distressing, after being able to relieve the volvulus and unravel the intussusception, to know that the patient had come to the hospital too late with commencing peritonitis and an almost gangrenous intestine; and that opium, although no doubt properly given, had once more masked symptoms until all chance of successful operative interference had passed.

XIX.—*Case of Acute Intussusception in a child four years old: resection: death from shock twenty hours after the operation.* By C. B. Lockwood. *Read January* 9, 1891.

IT is so important that unsuccessful as well as successful results should be recorded that I propose to give the notes of the following case of enterectomy for acute intussusception.

The patient was a strong and healthy female, who was four years of age. When I was called to see her by my friend, Mr. Blott, the following history was obtained :—On Tuesday, March 12, 1889, she was seized with purging and vomiting after her return from school. No blood or slime was noticed in what she passed, and next day a dose of castor oil was given, but was vomited up again. Nothing was passed by the bowels after the night of Tuesday and she vomited at intervals until Sunday, March 17th. At this date there was some exhaustion, and although the abdomen was rather distended a tumour about 3 in. long could be felt in the right iliac fossa. As there was complete intestinal obstruction chloroform was given, and I opened the abdomen in the right linea semilunaris with the slight hope of being able to withdraw the invaginated bowel. When the peritoneum was opened a considerable amount of serous fluid escaped, and the intussusception was easily found and could be extruded from the wound. It was about 3 in. long and situated upon the ileum about 4 in. from the ileo-cæcal valve. The invaginated bowel was firmly adherent to its ensheathing intestine and the peritoneum split at every attempt to withdraw it.

It was therefore decided to resect the intussusception, and with that end in view the peritoneal sac in the neighbourhood of the wound was packed with sponges and the intestine above and below the diseased part encircled with a thin elastic band passed through the mesentery, and held with pressure forceps. In removing the intussusception care was taken to cut quite clear of the injured bowel, and a small wedge of mesentery was also removed. The elastic band was then slackened and the upper bowel emptied of gas and fæces. It would have been hard to accomplish the operation had this not been done, and

its importance as regards the after-history of the case was kept in view. The edges of the mesentery were brought together with a continuous suture of fine silk and afterwards the bowel was sutured. At the mesenteric attachment the mucous membrane was sutured and afterwards the peritoneum. At what may be called the free edge of the bowel the serous membrane was alone sutured. About twenty stitches were inserted, those in the muscular and serous coat being passed after Czerny-Lembert's method. The sutured bowel was washed with perchloride lotion 1 in 2000, dusted with iodoform and returned. The abdominal cavity was irrigated with hot water before the return of the bowel, and this act, which was perhaps unnecessary, caused considerable shock and spasm of the diaphragm. The abdomen was closed with silk sutures and dressed with alembroth gauze and wool. The whole operation, from the commencement of the anæsthetic, lasted an hour and three quarters.

There was great shock after the operation, but the child took some brandy and cold beef essence. There was no vomiting, and she was fairly quiet from 11 P.M. until 8 A.M. after taking opium. At the last-mentioned hour she was still suffering from shock, and her pulse was about 160 per minute. Afterwards she became very restless, threw her arms about, and tried to get out of bed; finally death occurred twenty hours after the operation. At the post-mortem examination it was found that the abdomen contained no fluid, but that the ileum was congested and in the early stage of peritonitis. The sutured bowel was adherent to the parietal peritoneum behind the wound in the linea semilunaris, and the line of junction was hidden by recent lymph. The notes made by my colleague, Dr. Galloway, say that, "there was a line of fine silk sutures round the ileum about 1½ inches above the ileo-cæcal valve; the edges of the gut were firmly united; the gut would not let water through but passed it on into the cæcum. A radial incision in mesentery was united by sutures, not closely adherent."

When this child's abdomen was opened I had but faint hope of being able to withdraw the intussuscepted bowel as Mr. Howard Marsh has so successfully done. There was no alternative but resection when that chance failed as enterotomy has hitherto been invariably fatal. It seems obviously irrational to leave such a morbid mass as an intussusception in the abdomen, where it is certain to gangrene, or ulcerate, and set up peritonitis.

Rosenthal* has collected twenty-five cases of intussusception in which laparotomy was performed, and in which the invagination could not be withdrawn. In four of these the abdomen was closed again without further proceeding; in twelve excision was done; and in nine enterotomy. All of these were fatal except one case of excision. He also adds that E. Müller had published (*Centralblatt für Chirurgie*, 1885, No. 24, p. 71 and Langenbeck's *Archiv*, 1886, xxxiii) a successful case in the Clinic of Professor Bruns; and Braun had shown another at the Berlin Surgical Congress; so that out of fifteen cases of resection three successes were recorded.

Rosenthal's* successful case was that of a woman of thirty-five years of age who had a *chronic* intussusception of six weeks' duration. This caused a sharply bent tumour which could be easily felt, reaching from the umbilical region into the left hypochondrium. The tumour was painful on pressure and dull to percussion; and was at first thought to be an omental tumour. The patient was kept under observation and her bowels continued to act without pain or blood. As the patient was losing ground laparotomy was performed in the linea alba, with an incision from the umbilicus to within 6 cm. of the symphysis pubis; this incision was next carried to the right of the umbilicus to within 6 cm. of the rib cartilages. An intussusception was discovered which was thought to consist of an invagination of the ileum into the cæcum and ascending colon with a subsequent dragging of both the latter into the the transverse colon. Inasmuch as these could not be withdrawn the whole intussusception was resected, and the ileum sewn into the transverse colon; fæcal extravasation being prevented with elastic bands. To suture the intestines twelve Lembert's sutures (silk) were required. The abdomen was closed in the usual manner. The patient did well and the bowels were open spontaneously on the tenth day after the operation. The resected gut was 30 cm. long and 11 cm. wide.

As recovery is rare after the resection of either chronic or acute intussusception I thought a note of Rosenthal's case might not seem irrelevant. Perhaps it will be found that a distinction ought to be made between the acute and chronic varieties of this affection as regards their relative danger and mortality.

The case operated upon by myself belonged to that which

* *Berliner Klinische Wochenschrift*, Oct. 13, 1890, p. 944, *et seq.*

seems likely to prove the most unfavourable class, namely, the acute. But the time taken over the operation was, I fear, an important element in the unfavourable end. It had probably more to do with the causation of the shock than had the mere removal of the portion of bowel. However, the time taken over an operation is not altogether beyond our control, and with the assistance of Senn's modification of Jobert's method it might in similar cases be greatly curtailed. I also regretted having touched the mesentery because it caused so much bleeding that much valuable time was lost in stopping the flow and afterwards in fastening the edges together. Also it seems very doubtful whether such a step is necessary. It may also be remembered that the abdomen was irrigated with hot water, and this was done with the view of washing out clots and diminishing shock. Unfortunately it had the opposite effect, and not only increased the shock but also caused spasm of the diaphragm. However, it may be wrong to attribute everything to shock as there was some peritonitis both before and after the operation.

The importance of emptying the bowel was well exemplified by this case. It added greatly to the facility of the operation, and, as Grieg Smith has pointed out, this resort must have a great influence on the chances of recovery.* In truth an operation of this kind cannot be considered to have achieved its purpose if the intestines are returned into the abdomen in their distended state. Whether it might not have been better and more expeditious to have performed Senn's† operation of closing the divided ends of the ileum and turning the ileum into the cæcum by an enterostomy is hard to say, but owing to the fixation of the cæcum enterectomy seemed easiest.

* *Abdominal Surgery*, J. Grieg Smith, 2nd ed., p. 428, *et seq.*
† *Intestinal Surgery*, p. 95, Chicago, 1890.

XX.—*Two cases of Typhoid Fever fatal at a late period of the disease without Ulceration of Intestine.*

By Sidney Phillips, M.D. *Read January* 23, 1891.

Case 1.—B. K., æt. 22, came into Dr. Broadbent's wards at St. Mary's Hospital, and in his absence came under my care on September 6, 1890. He had suffered for a fortnight before admission with diarrhœa and loss of appetite.

On admission, he had headache, sordes on lips and teeth, much tremor, profuse sweats, typhoid spots, pulse rate 100: on the same evening the temperature was 104·6°. From the 7th to the 13th, it varied from 100·4° to 103° on each day. On the 14th, 15th, and 16th, it was not higher than 102°; on the 17th and 18th epistaxis occurred and the temperature rose to 104° on each evening. On the 20th it rose to 104·4°, and the delirium which had already existed for some days became more noisy. Many fresh spots appeared at this date and the pupils became contracted; the tremors ever since admission had been extreme, and there was now subsultus tendinum and all the evidences of the 'typhoid state;' from the 21st to the 27th inclusive, the temperature did not rise over 103·2°, and there was each morning a marked fall. On the 25th the pulse rate never previously above 112 went up to 150; on the 26th it was 144, on the 27th 128. It was always running, small and empty; there were never throughout his illness more than three stools a day, sometimes a less number or none at all. He gradually got worse, the sweats and contraction of pupils continuing, and the tremors being extreme and the mind confused, even when he was not actually delirious. On the 28th, the temperature rose to 103·6° and after it had fallen to 102° the patient died.

At the autopsy by Mr. J. J. Clarke, M.B., there was no noteworthy evidence of disease in any part of the body except that Peyer's patches in the lower third of the ileum were in the stage of deposit and there was congestion in patches higher up in the intestine. There was no ulceration in any part; there was a general enlargement and deposit in the mesenteric glands.

Case 2.—J. Mc D., æt. 36, came under my care while in charge of Dr. Broadbent's wards at St. Mary's Hospital on September

15, 1890: his illness commenced on the 8th of September with pains in back and legs and prostration. When admitted his lips and tongue were dry; temperature 102°, pulse 80, and respirations 18 per minute, and a few rhonchi were heard on both sides of the chest. He remained in much the same state till the 27th; there was no diarrhœa but the motions were of typhoid character. On the 23rd two or three characteristic spots were seen. On the 27th the temperature not previously over 102° rose to 104° in the evening, and the pulse rate increased from 94 to 112 and the respirations from 18 to 32 a minute with signs of commencing pneumonia at the right base. From this time the tremor increased, and he sweated at times profusely, the left pupil was much larger than the right; the pulse and respirations rose to 120 and 148 and to 36 and 34 respectively on the 28th and 29th. He sank into a marked typhoid state and died on the 29th.

At the autopsy performed by Mr. Clarke there was found right basic pneumonia, and in the lower part of the ileum Peyer's patches were enlarged and prominent as seen in the deposit stage of typhoid fever. The mesenteric glands were dark coloured, soft and swelled. There was no ulceration anywhere in the intestines except in one solitary gland in the beginning of the large intestine.

Remarks.—The first of these cases was under observation for twenty-four days in the hospital, and had been ill for fourteen days before admission. His death occurred, therefore, some time between the twenty-fourth and thirty-eighth days of the disease.

The second patient was under observation for fifteen days in the hospital, and from the history of his illness and his state on admission, there was no doubt he came in on the sixth to the eighth day of typhoid fever. His death, therefore, occurred between the twenty-first and twenty-third days of the disease.

In neither case was there any ulceration of the intestine when death occurred. Ulceration in typhoid fever usually commences on the ninth or tenth day, often earlier, but seldom much later, for Murchison ('Continued Fevers,' p. 624) was only able to find records of three cases in which it had not occurred by the twelfth day. The two cases I now record are, therefore, of interest in extending at least over twenty-four and twenty-one days respectively (and in the first case probably much longer) without ulceration of intestine.

Another point of interest in these cases is the severity of the tremor. Tremor in typhoid fever is usually regarded as significant of deep ulceration, and this was a point much insisted upon by Sir William Jenner. There is no doubt that severe deep ulceration is commonly associated with severe tremor. In each of these two cases, however, the tremor was extreme from the time the patients came under observation to the termination of the disease, but the post-mortem examinations showed an entire absence of ulceration.

It appears, therefore, from these two cases, that ulceration of intestine is not to be concluded as necessarily present, from the period for which the disease has lasted, nor from the severity of the tremor.

No doubt, in most cases there is ulceration after the tenth day, and if it be deep there is severe tremor, but epidemics of typhoid fever vary much in type, and during the present autumn these two fatal cases, and others which have come under my observation and recovered, have all been characterised by the absence of any signs of local intestinal lesion, and by signs of severe blood-poisoning, with extreme tremor, coming on for the most part about the end of the third week, in what to that time had been apparently mild attacks.

It is probable in the case which recovered, as in those in which a post-mortem examination was made, the ulceration was slight or absent.

It is often of much importance to be able to determine whether ulcers are present in typhoid fever or not, for in cases with severe blood-poisoning the patient's best chance of recovery may lie in the elimination of the poisonous products by calomel or other purgative. Such treatment, however, would be of extreme danger if ulcers were present. And the two cases are here recorded because they contribute to show that neither the late period which the disease has attained, nor the presence of extreme tremor, are to be taken as conclusive of ulceration. The signs more to be relied upon are severe diarrhœa, excessive tympanites, and melæna, and if these be absent there is no reason to refrain from aperients if otherwise indicated.

I hope I may be allowed to add that since writing this paper I find confirmation of its purport in a *Semaine Medicale* (March 19, 1890, p. 94), where Mr. Vaillard records a case in which a patient supposed to have suffered from typhoid

fever died, and no intestinal ulceration was found at the autopsy. In this case there was some uncertainty as to whether the patient actually did suffer from typhoid, though Eberth's bacillus was found in the spleen and other organs. But in the discussion which followed the relation of the case at the Société des Hôpitaux, Dr. Chantemesse recorded a case of undoubted typhoid, in which only one ulcer the size of a lentil was found after death, and he stated his opinion that typhoid fever might exist without intestinal ulceration.

XXI.—*A case of Stricture of the Pylorus following upon hydrochloric acid poisoning in which a modified Loreta's operation was performed.* By W. Hale White, M.D., and W. A. Lane, M.S. *Read February* 13, 1891.

HENRY G., æt. 43, admitted into Guy's Hospital Sept. 1, 1890. Personal history unimportant. Family history good, except that he has a brother with a tumour in the throat which is said to be incurable.

Present illness.—Seven weeks before admission he drank some spirits of salts. The evidence is conflicting as to the quantity drunk, and also as to whether it was done suicidedly. He felt a corroding sensation in the throat and had much hæmatemesis. There was pain in the epigastrium, sore mouth, swollen tongue, and all the symptoms of irritant poisoning. The doctor treated him with alkalies, and at the end of three days he was better. On the fourth day he was able to return to his work, and at the end of a fortnight he was able to eat a mutton chop. About August 10 (three weeks before admission) he again began to vomit his food soon after it was taken, and for a week before admission he could not retain even milk and water. He had no epigastric pain but he wasted considerably.

Condition on admission.—Is very wasted and weak. He is frequently sick bringing up dark coffee-grounds material. His bowels are open but the motions contain blood. He was allowed ℥j of milk every hour. The vomiting ceased the fourth day after admission, and the patient felt better, but the stomach slowly dilated. He vomited a large quantity on September 13; after that he was not sick till September 25. During this time he was able to retain simple food such as custard, jelly, milk, whey, &c.

September 25.—Stomach dilated; it forms a prominent dull swelling reaching to within an inch of the umbilicus. Succussion can be obtained. As he had began to be sick again and the dilatation increased, the stomach was ordered to be washed out twice a day. The fluid obtained was dark brown, acid, and sour, but contained no free hydrochloric acid. He was fed with small quantities of cream and whey, and

nutrient enemata. The lavage often made him sick, but he gradually improved.

October 3.—To-day he was much worse; as he was collapsed after the lavage it was discontinued.

October 6.—During the last three days he had got rapidly worse, he was very weak with a thready pulse, and it seemed that he would probably die very shortly, therefore an exploratory operation was undertaken by Mr. Lane. The stomach having been washed out and the india-rubber tube left in as a guide, its *pyloric* extremity was exposed by means of a vertical incision through the right rectus muscle. It was found that there was an annular constriction of the stomach involving the pylorus, and extending from the duodenal end of the pylorus to the left for 1½ inches. It felt dense or rigid. The rest of the stomach was slightly dilated, and its walls hypertrophied, the strictured portion projecting abruptly from its upper right limit. Judging from the firm condition of the strictured portion, it was considered that it would be useless to open the stomach and to attempt to rapidly and forcibly dilate the constricted portion sufficiently to be of any permanent benefit to the patient, therefore the anterior wall of the stomach in the immediate vicinity of the stricture was attached to the abdominal incision, in order that the constricted portion might subsequently be dilated more gradually and permanently. The patient was fed by nutrient enemas for forty-eight hours, at the end of which time the stomach was opened and a small No. 4 rubber catheter fixed on a wire stylet was introduced through the minute aperture of the stricture into the duodenum. He was fed through this tube frequently with an emulsion of milk and pancreas, and he improved steadily for two days, but died suddenly on October 11, seventy-six hours after the stomach was opened.

Autopsy.—The wound appeared healthy. There was no general peritonitis, but there was just a trace of lymph on the upper surface of the liver near the gall-bladder. The œsophagus was normal except that the muscular coat was a little thick at the lower part. The stomach was smaller than normal, it contained only a little dark brown fluid with some small black lumps in it. The walls were hypertrophied, especially the muscular coat which was very thick near the pylorus. There was no trace of ulceration in the stomach or pylorus, but there were several ecchymoses on the mucous membrane. About half an inch from the pylorus was an incision extending from just below the upper curvature nearly

to the lower. It was almost vertical but sloped a little downwards and to the right, its edges were thickened and attached to the abdominal wall. No trace of œsophageal stricture nor any obstruction at the cardiac orifice. The pylorus examined from the outside was regular in shape, and not much altered in size. It was very firm and hard. On looking into the stomach only a dimple could be seen to represent the pyloric orifice. The little finger could not be introduced at all either from the duodenum or the stomach. The gastric orifice was a little reddened. The parts were normal in their relationship to each other, but it was evident that there was a tight constriction, and it was surprising that a No. 4 catheter passed. No trace of ulceration. The whole of the intestines had some food or fæces in them, and the lymphatics looked as though absorption were going on before death. There was no trace of pulmonary embolism.

Microscopical examination showed that the thickening of the pylorus was entirely due to an enormous overgrowth of plain muscular tissue. There was no trace of malignant disease, nor increase of fibrous tissue. I am indebted to Mr. H. E. Durham for the sections.

Remarks.—This patient at first gave one the impression that he was suffering from chronic gastritis, and consequent dilatation due to the swallowing of hydrochloric acid, although the fact, that he seemed to recover from the effects of the poison in a few days, and to remain perfectly well for three or four weeks before the symptoms for which he was admitted came on, was against this view, which, however, gained ground as he improved considerably under treatment. When he got rapidly worse, however, three possibilities presented themselves, either it was a case of extremely severe gastritis or he had a tumour (probably malignant) of his pylorus, and the swallowing of the hydrochloric acid had nothing to do with his illness, or lastly a cicatrising ulcer was causing pyloric obstruction. We are quite at a loss to explain the condition of things which the operation, the autopsy, and the histological examination revealed.

After the post-mortem examination, but before the microscopical sections were examined, we were inclined to think that the chronic gastritis due to his having swallowed hydrochloric acid had led to fibroid thickening and subsequent contraction of the pyloric orifice, but against this view it would be most unusual for any acid or other irritant to cause such severe effects at the pylorus without leaving any

evidence of its presence in the œsophagus or the body of the stomach, or we thought it possible that the man had an innocent pyloric tumour quite independent of his having swallowed the acid. There is much to be said in favour of this view, for he quickly recovered from the results of the poison; there was no ulceration, and it is most unusual to find stricture due to swallowing an acid present only at the pylorus.

We were quite unprepared to find that the thickened pylorus consisted of nothing but unstriped muscle. Innocent tumours of the pylorus are very rare, so exceptional, indeed, that many text-books use the term tumour of pylorus as synonymous with malignant disease of that structure, and, as far as we know, the previously recorded cases of innocent tumour of the pylorus have all been instances of fibroid thickening, and naturally the suggestion has been made that they were due to cicatrisation of an ulcer; but we do not see any evidence of such an explanation in our case, nor that the thickening of the pylorus was due to any form of irritation. One of us has recorded a case* in which fatal thickening of the pylorus was due to the irritation of a gall-stone which ulcerated from an adherent gall-bladder through the pylorus into the stomach.

We must, we are afraid, leave our case unexplained. On the whole it is, perhaps, difficult to believe that the hydrochloric acid had nothing to do with the result.

That the operation was justified was abundantly proved by what was found. The cause of death could not be made out, there seemed every probability that the patient would recover, but it must be remembered that patients who attempt suicide are very bad subjects; in fact it is just possible that this man killed himself in some way we did not discover, for a very slight cause would suffice to kill anyone so weak. The case seems clearly to show that we may expect by such an operation to do much good to patients suffering from non-malignant pyloric obstruction.

* *Path. Trans.*, vol. xxxvii, p. 280.

XXII.—*Ruptured Suppurating Vermiform Appendix: laparotomy: removal of appendix: recovery.* By Herbert Wm. Allingham. *Read February* 13, 1891.

On August 30, 1890, Edwin R., a boy æt. 13, came to the surgery at the Great Northern Hospital; he bent forward considerably and complained of pain in the abdomen consequent on a fall on the previous day. On that afternoon while running downhill, he had fallen and knocked his abdomen against a hillock. This was followed by great pain, but after a few minutes he had been able to get up and walk home. Pain, though not of a very severe kind, continued during the evening and he refused his supper. In the middle of the night he woke up complaining of great pain in the abdomen below the umbilicus, especially towards the right inguinal region, which, he stated, had been the place struck at his fall. All the rest of the night the pain was very severe and kept him awake. In the morning he was sick three times, on each occasion after taking nourishment; the bowels were slightly opened.

The patient declared that he had been quite well up to the time of the fall, that he had no pain in the abdomen, and that the bowels had been quite regular. However, some months before, he had had constipation and pain in the lower part of the abdomen (he could not localise it more precisely), but he had recovered soon and the pain had disappeared.

On his admission into the hospital at about 2.30 in the afternoon, his temperature was 100·6°, and the pulse was rather feeble, but there were no signs whatever of collapse or fainting. The tongue was furred and rather dry. He complained of pain in the lower part of the abdomen which he referred to an area just below the umbilicus, more or less in the median line. He described the sensation as that of knives entering him.

Respiration was principally thoracic, but the upper part of the abdomen was partly used. The abdominal wall was held rather tense below the umbilicus, and there was considerable tenderness, but the patient could bear palpation and percussion to a certain extent. He lay with his legs

drawn up, especially the right one. About ten ounces of quite clear urine were drawn off by catheter.

During the afternoon the pain and tenderness became more marked, and the temperature rose to 101·2°. The lower part of the abdomen seemed to be more swollen. He had no sickness; the bowels did not act. He slept slightly. At nine in the evening I saw the boy and decided to operate at once, for it was evident that there was something wrong with the abdomen. Chloroform was given and an incision about 2 inches long was made in the median line between the umbilicus and the pubes. On opening the peritoneum about 2 ounces of pus welled up into the wound. The intestines were not much distended, but I had considerable difficulty in finding the cæcum, which was not in the right iliac region, but was in the middle line of the abdomen. When the cæcum was found I saw the appendix vermiformis with a perforation in it, and by it were two small fæcal concretions. The appendix was closely adherent to the cæcum, but there was no evidence of recent or previous peritonitis. The appendix was then separated from the cæcum and was ligatured with fine silk, a fine suture uniting the peritoneum over the cut ends. On the separation of the appendix there was a little bleeding.

A glass drainage-tube was inserted into the pelvis, the abdomen was well washed out with hot water, and the abdominal wound was stitched up with silkworm gut sutures. The operation lasted about one and a half hours; the patient was rather faint when the peritoneum was opened and when the intestines were pulled out, but at the conclusion of the operation his condition was very fair. During the night the drainage-tube was emptied every half-hour at first, and each hour afterwards, about two and a half ounces of fluid, in all, being drawn out by a syringe. He had no sickness and slept very well. He took about an ounce of brandy during the night. Temperature fell to normal.

The next morning (August 31) he felt much better, the pain being nothing like what it had been. He complained of thirst, he had no sickness, the pulse was fairly good; temperature 98·8°. There was little discharge in the tube and the patient passed water satisfactorily.

At 1.30 P.M. he began to be sick and the milk was left off. This sickness continued during the afternoon, and he hiccoughed once or twice. Pain became more severe; the abdomen was tender all over, the tongue was moist. The drainage-tube was then removed, as it appeared to be no

longer required; after this the patient improved, and temperature, which had been 99·6° at 4 P.M., had fallen to the normal by 8 P.M. He was sick once or twice in the evening. As I found him with the abdomen distended I determined to try mag. sulph. frequently, so as to keep up peristalsis; but as it was immediately rejected, the house surgeon did not repeat the dose. At midnight he was ordered two ounces of brandy every two hours. He had a little hiccough, but soon went to sleep.

September 1.—The pain and tenderness were less. He had had no sickness since 1 A.M., and no hiccough. The tongue was moist and clean. The passage of flatus relieved him. He complained of thirst.

On the 2nd, he was about the same; the belly was somewhat distended and still tender, and there was some redness about the stitches. Temp. 99°. In the afternoon temperature rose to 102·4°; three stitches were snipped, and about an ounce of sanious and very fœtid pus escaped. The edges of the wound looked very sloughy.

On the 3rd, temperature came down to 100°; the belly was tender and rather distended. Bowels open, no sickness, tongue moist. As he expressed a desire to go on the balcony to get some fresh air, I allowed him to be taken out on his bed for half an hour.

On the 4th, temperature was 99·2°; he had been sick once in the morning. The bowels had been open. There was some pain and tenderness; the tongue was moist. The edges of the wound were gaping and the discharge was fœtid.

On the afternoon of the 5th, the temperature rose again to 102°. The remainder of the stitches were removed. The tongue was moist, and he complained of paroxysmal pain in the abdomen. As his bowels were very irritable and he constantly wanted to go to stool, I examined him and found an impaction. A large injection, which I ordered, quickly gave relief.

On the 6th, the wound was gaping in its whole length and very sloughy at its base and edges. The peritoneal cavity was opened, and the intestines or omentum were exposed covered with slough. The bowels were still acting; there was no sickness.

On the 9th, temperature was lower; the tongue was dry and furred but white. The wound looked clean and gaped widely. There was considerable pain at times. The bowels were open rather loosely; there was no sickness.

On the 13th, the temperature remained about 100°; there was a discharge of pus from the wound, but the general peritoneal cavity was shut off. The patient took food moderately well; the wound was covered with granulations. He had attacks of pain in the belly which caused him to cry out, and necessitated a sedative at night.

On the 18th, he was much better; the wound was granulating healthily. Pain had much diminished.

On the 20th, a considerable amount of pus welled up on each side of the wound; a drainage-tube was therefore inserted, and more pus was washed out by means of the irrigator.

October 16.—The patient was doing very well, eating and sleeping very satisfactorily. The abdominal wound was healing rapidly, and the abdomen was quite soft and entirely free from tenderness. Temperature normal.

On February 13, 1891, the boy was shown at the Society. He was perfectly well, and had been at work for the previous two months.

XXIII.—*Four cases of Appendicitis successfully treated by removal of the diseased appendix.* By J. Bland Sutton. *Read February* 13, 1891.

CASE 1.—On July 27, 1890, Henry F., æt. 24, coachman, was admitted into the Middlesex Hospital under the care of Dr. Sydney Coupland.

Three days before admission the patient was seized with great abdominal pain after taking his usual midday meal. At 8 o'clock in the evening he vomited, undigested, the food he had taken at 1 o'clock. Next day the belly was swollen and tender. Vomiting continued at intervals, and on the third day he was sent to the hospital. When admitted he complained of dull aching pain over the whole belly, and particularly in the right flank, which was tender, resistent, and dull on percussion. He was unable to pass urine, as the straining caused great pain; it was therefore drawn off with a catheter. There was no history of any similar attack. Four leeches followed by the application of warm fomentations were ordered.

July 28.—Tenderness and fulness more marked, and it was clear that the patient was suffering from perityphlitis, probably due to ulceration of the appendix.

July 30.—Temp. 100°; pulse 80; tongue coated, and the bowels opened by means of an enema.

August 2.—Temp. 102·4°; pulse 96; pain so very great that it was necessary to administer half a grain of the extract of opium every three hours. Up to this date he had had no definite rigor. It was now decided to seek surgical aid.

I made a vertical incision over the line of the cæcum and ascending colon 3 inches in length. When the peritoneum was opened in the lower third of the wound 6 oz. of fœtid pus welled up, having a distinctly fæcal odour. A second collection of pus was also found behind the colon above the level of the ileo-cæcal valve. The wound was freely irrigated, and the appendix was detected adherent to the anterior face of the cæcum. The adhesions were tied with slender gut, and on tracing the appendix it was found that its middle third had sloughed. The stump was followed round to the cæcum and cut short, leaving only half an inch of its proximal

end. The walls of the appendix were so thick that the stump stuck up like a stick. The edges of the cut surface were drawn together by three fine catgut sutures passed through the serous and muscular coats of the bowel. It was impossible to bring the peritoneal edges into apposition as when dealing with healthy bowel. The wound was freely irrigated with a solution of perchloride of mercury 1 in 2000. As the abscess cavity was not shut off from the general peritoneal cavity, the whole abdominal cavity was freely flushed with two gallons of water at 105° Fahr. The muscles were drawn together by means of gut sutures, and the skin edges sutured with waxed silk, and a drainage-tube (india-rubber) inserted in each abscess cavity.

The after-treatment was conducted on the same principles as in ovariotomy, except that opium was freely administered to allay pain. In four days the drainage-tubes were removed, and in thirty days the patient left the hospital not merely convalescent, but in the last twelve days of his stay in the hospital he had gained considerably in flesh.

Case 2.—William T., æt. 22, a groom, came under my care September 8, 1890, with the following history obtained by Mr. Horace Savory, house surgeon. In 1887 a horse rolled upon him, and in consequence of what was called a "sprained side," he kept his bed six weeks. Six months later he was laid up for several weeks by a similar pain in the right side. On this occasion the illness was described as "gravel in the kidney."

In June, 1889, he was in St. George's Hospital for six weeks for an attack similar to the two preceding. This was called "typhlitis."

In August, 1890, whilst walking along the street he was seized with the old pain, and after resting in bed four weeks he attempted to resume work, but the pain immediately returned, and he sought admission to the Middlesex Hospital, and was admitted under my care, as he was supposed to be suffering from renal calculus.

When admitted he complained of great pain in the right flank, and kept the right leg slightly flexed. There was considerable tenderness, but no distinct tumour could be felt. Pulse 80. Temp. 98·6° in the morning; 99·4° at night. The pain, tenderness, flexed leg, and the recurrent attacks of pain left no doubt on my mind that it was a case of *chronic appendicitis*, and I advised the patient of the probable issues

of the case, and suggested that the parts should be explored. To this he unhesitatingly assented.

I, therefore, exposed the cæcum by an incision three inches long, following the curve of the anterior border of the ileum, beginning two inches above and an inch to the inner side of the anterior superior iliac spine. The appendix was quickly found tucked in the concavity formed by the cæcum and termination of the ileum. One small adhesion only required detachment. The appendix measured 6 cm., and its terminal segment was as round as a fat earthworm, and felt like one; 2 cm. from the cæcum it was soft and pliable like a normal appendix, but at the junction of the soft and hard portions an oval swelling was obvious. After a brief consultation with my colleagues I snipped it off immediately above the swelling, and found the lumen completely occluded. The cut end was stitched with three interrupted fine catgut sutures, and the vermiform branch of the ileo-colic artery ligatured. The wound was closed in the usual manner, two drainage-tubes put in the wound (not in the peritoneal cavity), dressing applied, and the patient returned to bed.

Convalescence uninterrupted. Patient left quite well on the fourteenth day.

On examining the excised appendix, it was found completely strictured at the point where it was detached, and the part below the obstruction was filled with pus.

Under the microscope the walls were seen to be slightly thickened, and the mucous membrane completely destroyed.

Case 3.—One evening in September, 1890, I was asked by Dr. J. C. Clarke to see W. E., a man æt. 45, who was complaining of severe pain in the right ilio-costal space. The pain came on at intervals, and resembled renal colic. The illness began at 5 o'clock on the morning of September 10 whilst going to work by a sudden severe pain in the right loin. He returned home and went to bed. These sudden spasmodic seizures occurred at frequent intervals, and especially when in the act of making water. Dr. Clarke frequently examined the urine in the intervals between the initial attack and our consultation, and found the urine normal in quantity, reaction, and specific gravity; no albumen. The pulse 90. Temperature ranged from 99·4° in the morning to 102° in the evening. The bowels somewhat constipated. Opium had been freely administered. As the patient had been in this

state for ten days, and was evidently in a serious condition, I sent him into the hospital.

FIG. 4.—Cæcum and retro-cæcal appendix, showing the position of the parts in Case 3 (seen from behind).

The symptoms remained the same, great pain and tenderness in the ilio-costal space, especially over the crest of the ilium. Pulse 100. Temp. 102° in the morning, 99° at night.

Microscopical examination of urine revealed a slight trace of pus; this we found arose from a mild urethritis.

Three days after admission patient was examined under chloroform, and a rounded swelling could be easily made out at the level of the crest of the right ilium, but deeply placed.

Diagnosis.—An abscess behind the cæcum, probably due to inflammation of a vermiform appendix lying on the posterior aspect of the cæcum and ascending colon.

The next day an incision was made in a vertical direction over the swelling, commencing 3 inches above the anterior superior iliac spine. The swelling was exposed, and on opening its peritoneal investment 2 oz. of pus escaped. When the parts were clean and thoroughly exposed the proximal third of a greatly thickened vermiform appendix was recognised lying on the back of the cæcum to which it was adherent. The adhesions were separated, the fragment of

appendix cut off, and the end sutured by three fine silk and two fine catgut sutures. The middle third of the appendix was destroyed; the distal end was found firmly united to the back of the colon, and in contact with the lower border of the kidney. The abscess extended for a short distance above the level of the mid-point of the crest of the ilium. The wound was freely irrigated with a solution of perchloride of mercury (1 in 5000), a large drainage-tube introduced, and the muscles sutured with gut.

The relief which followed this operation was very marked, the pain and tenderness at once disappeared and the wound granulated freely. Fourteen days after the operation convalescence was interrupted by an attack of pleurisy on the right side. This subsided in the course of seven days. The wound in the side granulated rapidly, and the patient left the hospital convalescent twenty-eight days after the operation.

The occurrence of pleurisy in the course of convalescence made me suspect that the trouble in the appendix might possibly be due to tubercle. Many sections of the appendix were examined for this purpose, but with a negative result.

Case 4.—Robert R., æt. 19, shoemaker, was admitted into the Middlesex Hospital under the care of Dr. Finlay, August 29, 1890. It appears that on August 25 he was seized with sudden severe pain in the lower part of the abdomen, accompanied with nausea, but no actual vomiting. The abdominal pain lasted two or three days, and was most acute in the right iliac fossa.

When admitted into hospital the belly was distended, but the belly-wall was soft and elastic except in the right iliac region, where there was some slight redness as well as œdema, pain, and tenderness. The œdema extended a few inches below Poupart's ligament. Temp. 101·4°; pulse 84. Hot fomentations were ordered to be applied to the seat of pain, and half a grain of the extract of opium in pill every six hours.

Under a careful diet the patient gradually improved, and on September 11 he was allowed to get up. Two days later (September 13) the pain accompanied by tenderness returned. Temp. 101·4°; urine, acid, 1022; no albumen. He was kept strictly in bed, and temperature stood at 99° in the morning, and 100° in the evening. On September 23 a small area of redness appeared in the skin at a spot about an inch internal to the anterior superior iliac spine.

September 25th.—I was asked to see the patient, and the

signs of pus were so unmistakable that it was arranged to explore the case next day.

Operation.—An incision was made an inch to the inner side and an inch above the anterior superior iliac spine vertically downwards to Poupart's ligament. Pus of a yellow colour containing bubbles of gas welled up in large quantity from the wound. The position of the colon was ascertained by the finger, and the wound enlarged upwards. The abscess cavity dipped deeply among the fibres of the iliacus muscle, and the external iliac artery was seen pulsating along its inner border. The appendix was recognised projecting into the abscess cavity. It was quickly isolated with the finger, cut off, and its orifice closed by three interrupted, slender, gut ligatures. The wound was freely irrigated with mercury solution (1 in 5000), and the wound lightly plugged with iodoform gauze, and closed, with the exception of the lower inch. There was free oozing during the operation. On examining the appendix it was found that the end had sloughed, and the extremity left was pointed and had become closed by granulation. The tube above this was much dilated, and contained thick mucus.

There was some shock following the operation, due to loss of blood. This quickly passed away, and next morning the temperature was normal and continued so till the eighth day, when it suddenly rose to 103°. On removing the dressing there was a marked fæcal odour about the wound. The temperature slowly descended, and rose again on the eleventh day to 102°; at this time bubbles of gas escaped from the wound. It now became clear that a small fistula had formed between the gut and the wound. The granulation process, however, continued rapidly, and the wound gradually contracted to a narrow sinus and finally closed.

Remarks.—Of these four cases, three may be described as *acute,* and one as *chronic relapsing appendicitis.* In the three acute cases the patients were suffering, so far as I can rely on their histories, from an initial attack.

The calm and steady convalescence in Case 2 carries with it a suggestive lesson, compared with the risk, damage, and anxiety which follow when the abscess is allowed to burrow as in Case 4.

One of my surgical colleagues who saw some of the operations fancied that the removal of the appendix, after evacuation of the abscess, increased the risk. Let me state most

emphatically that the excision of the diseased appendix in no way complicated the procedure and in no way involved additional risk. The operation, to anyone accustomed to abdominal surgery, is simplicity itself.

Case 3 was the most interesting diagnostically as it so closely simulated renal colic, and I can now recall several cases, described post mortem as perinephritic abscesses, which were really abscesses originating in connection with a vertical retro-cæcal appendix which had extended to, and invaded, the peri-renal region.

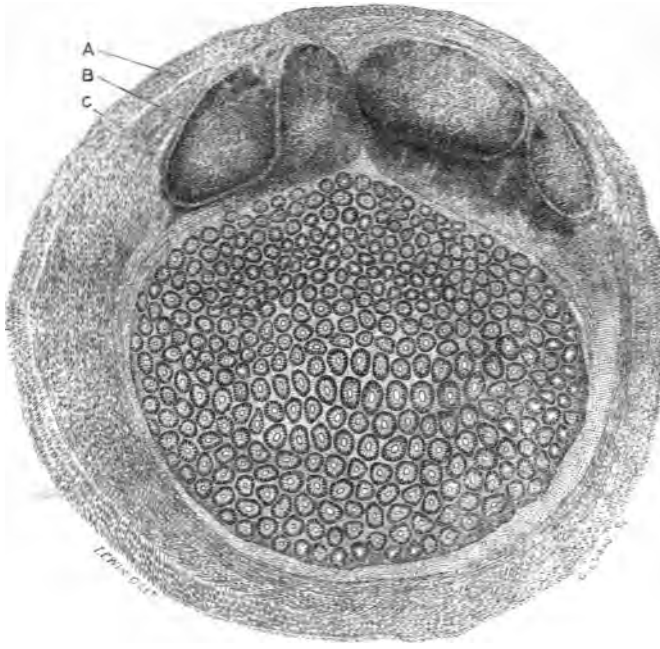


FIG. 5.—Microscopical appearance of the tip of the vermiform appendix, showing the collection of adenoid tissue (B). Each mass is surrounded by a capsule of delicate unstriped muscle-tissue (C). The external longitudinal layer of muscle-tissue is indicated at A.

The cases suggest strongly the desirability of physicians giving patients the advantage of a surgeon earlier in these cases of relapsing appendicitis, and in initial attacks, accompanied with a course of temperature suggesting pus; for,

curiously enough, the presence of even a large quantity of fœtid fæcal-contaminated pus around the cæcum is not indicated in an orthodox manner by rigors. It should also be borne in mind that in those cases of appendicitis and typhlitis ushered in by intense abdominal pain, distension, and other signs of peritoneal infection, the severe symptoms are due in many cases to the leakage of pus from a previously existing abscess into the general peritoneal cavity. In such cases Surgery can do little good.

In most cases of acute inflammation of the appendix the sloughing occurs at or near its tip. This is, I believe, in a large measure explained by the circumstance that for richness of adenoid tissue it rivals the tonsils; and in order to show the large amount of this notoriously unstable tissue at the tip of the appendix I have introduced the sketch (Fig. 5).

XXIV.—*Two cases of Excision of the Vermiform Appendix.* By Andrew Clark. *Read February* 13, 1891.

B. R., æt. 22, was admitted into the Middlesex Hospital under the care of Dr. Cayley on September 14, 1890, with the following history. On the evening of the 11th he was seized with pain in the right iliac region, and during the next day it became much worse; his bowels not having been relieved for two days he took a dose of rhubarb, which resulted in a small evacuation in the course of the day, but the pain continued to increase in severity, so that on the 13th he was compelled to take to his bed, and on the 14th went to the hospital. He stated that since an attack of jaundice twelve years ago he had had occasional "bilious" attacks, which were accompanied with vomiting and lasted a day or two; otherwise his health had been very good. On admission a note says:—"No abdominal distention, but a slight swelling in right iliac region; dulness over this, but the rest of the abdomen resonant. General abdominal tenderness, most marked over the swelling. September 15, vomited a little green fluid; this morning, presented same symptoms as yesterday, but there was a marked increase in the abdominal tenderness. Urine contained a trace of albumen." A consultation was held and an exploratory operation was decided on. He was, therefore, transferred to my care, and at 5 P.M., having been anæsthetised, a curved incision about four inches long was made in the iliac region over the centre of the swelling. The moment the abscess cavity was opened a quantity of fœtid pus escaped, and together with it a small fæcal concretion; the intestines were matted together by recent but firm adhesions, which bound down the vermiform appendix. This was found to present a perforation, the size of a small bean, with sloughing edges; it was drawn up and cut off rather less than an inch from the cæcum and the end closed with gut sutures, the peritoneal surfaces being carefully approximated; the cavity was thoroughly washed out, a large drainage-tube inserted, and the wound closed with deep gut and superficial silk sutures.

In the course of the next two hours the patient vomited

three times, but at 9 P.M. expressed himself as feeling better; the tenderness was less, and temperature normal; ordered Pil. Opii gr. j every six hours. Milk and soda water.

September 16.—Vomited a little greenish fluid at 1 and 6, otherwise comfortable. Temperature at 10 A.M. 100·4°; ordered nutrient enemata; became restless towards the evening.

September 17.—Still restless; abdomen more distended; tenderness less. Wound dressed to-day, looks well; discharge neither fœtid nor profuse.

September 18.—Appears better; abdomen less tense; more discharge, but not fœtid. Dressings changed twice. Opium omitted; brandy by mouth; nutrient enemata without brandy. 6 P.M., sudden rise of temperature to 103°. In the course of the evening the abdomen became rapidly more distended; tenderness increased; persistent vomiting of greenish fluid, which would not yield to any remedies. Became collapsed and pulseless, and died at 1 A.M.

At the post-mortem examination the stump of the vermiform appendix was found to have sloughed at the end, its entrance into the bowel normal, and a probe readily passed from cæcum into the abscess cavity; a track of pus led into the peritoneal cavity, and the coils of intestine in the right lumbar region were lying in much purulent lymph, the lower two thirds of peritoneum being greatly inflamed. Two more concretions, like that found at the operation, were lying loose in the abscess cavity.

G. H., æt. 17, was admitted under Dr. Cayley on September 13th, 1890, with the usual symptoms of typhlitis. He stated that he had been in the hospital for a similar condition in November, 1889, since which time until the present attack, which commenced two days before admission, he had been quite well. At first he improved under treatment, but by the 2nd October it was evident that there was an abscess, so he was transferred to my care with a view to operation. On the same day he was anæsthetised, and a curved incision, about four inches long, made in the right inguinal region. As soon as the abdominal wall was divided a large quantity of fœtid pus escaped; there was an abscess cavity, about the size of a large orange, entirely shut off from the peritoneal cavity, and lying across the centre, adherent at both ends, was the vermiform appendix. With some difficulty the free end was brought up into the wound; its extremity had

sloughed, and a probe could be passed through into the cæcum. It was cut off about an inch from the cæcum, and the peritoneal surfaces carefully united with gut sutures. The abscess cavity was thoroughly irrigated, the wound closed with deep and superficial sutures, except at the upper end, where a large drainage-tube was inserted. It is sufficient to add that the patient made uninterrupted progress towards recovery, and had it not been for a bedsore, which detained him in the hospital till November 1st, he would have been able to leave before the middle of October.

I put these cases on record in conjunction with the four cases of Mr. Sutton's, which were in the hospital about the same time. In the first case general peritonitis had supervened before the operation was attempted—indeed, before the admission of the patient; but the operation and subsequent post-mortem showed that the origin of the trouble was in the vermiform appendix, probably from the presence of the concretion. In the second case there was nothing found to account for the condition of the appendix, but it was practically the third attack, as he was convalescent a week after admission, and was going out of the hospital, when the symptoms recurred, and since its removal he has remained perfectly well up to the present time (June, 1891).

XXV.—*A case of Anterior Polio-myelitis and Multiple Neuritis.* By W. R. Gowers, M.D., F.R.S. *Read March* 13, 1891.

THE facts of the case that I have to bring before your notice are, unfortunately, scanty, but, on the other hand, they are distinct in their nature and clear in their indications, and comprehend all those that are essential for the purpose for which it is brought forward.

The patient was a boy, æt. 7, at the time of his attack. For an opportunity of seeing him I am indebted to Dr. Stanley Smith. He was of an extremely nervous and excitable temperament, but I do not know that this fact has any bearing on the malady which now concerns us. He was attacked with acute atrophic paralysis in June, 1889. The affection had developed with the constitutional disturbance that so often attends the onset, and the first symptoms of this commenced on the evening of the day on which, in the morning, he had had, for the first time that year, a quite cold bath. There had been a sudden burst of hot weather for several days beforehand. Loss of power was only recognised by the parents when he had been ill for nearly a week, with general malaise and increasing pain and tenderness in the limbs. I saw him first two days later, when he presented the characteristic symptoms of acute anterior polio-myelitis in its early stage, involving chiefly the cervical cord. There was complete paralysis of the left arm in all parts, and also of the right upper arm and shoulder; the right hand could be moved fairly well, and on this side the forearm and hand muscles had apparently escaped. The legs could be moved freely in all parts, but without much power, and flexion of the right ankle was a little more feeble than that of the left. This symptom, I may add, soon passed away. The knee-jerks were normal.

A week later the paralysed muscles were distinctly wasting, and had lost faradic irritability, at least to such a strength and mode of testing as it was prudent to employ. Voltaic irritability was preserved. There had been some weakness of the neck muscles, and difficulty in supporting the head, but this had passed away.

In addition to these symptoms there was, even before the palsy was first observed, tenderness in both the arms and the legs, which was extreme on the second day of the palsy.

It was greatest in the middle of the limbs, greater in the left arm than in the right, and on a cursory examination apparently localised in the elbow-joints and the knee-joints. Every movement of the limbs which caused the least flexion of these joints gave great pain, and so did any manipulation of the limbs in the neighbourhood of the joints. But more careful examination showed clearly that the tenderness was not in the joints, but in the nerves. The ulnar and median nerves in the arms were especially sensitive, and more so in the left arm than in the right. The tenderness extended up to the brachial plexus, but lessening in degree. In the legs the tenderness was localised in the sciatic nerves, which were sensitive both to pressure in the popliteal space and at the back of the thigh, and also to tension. Towards the hip it became less, but it was readily elicited by the method which is so useful for ascertaining the existence of tenderness to tension in cases of sciatica, making the course of the nerve tense by flexing the hip at a right angle, and the knee at a little more than a right angle, and then gently pressing on the nerve. If the nerve is tender in any part of its course, the fact is always brought very strikingly by this expedient.

It was clear, therefore, that the child was suffering not only from the affection of the spinal cord, but also from an inflammation of the nerves of the limbs, most intense in the middle of their course, and causing such extreme local tenderness as to be clearly, in the main, an inflammation of the nerve-sheath. The absence of any indication of damage to the fibres of the nerves showed that these were not involved in the inflammation. It may, however, be asked, with such unmistakable inflammation of the nerves, might not the motor fibres have suffered and caused the palsy? That the palsy was really spinal was conclusively proved by the following facts: The muscles presented rapid increase in the atrophy, while the tenderness of the nerves gradually lessened, and passed away in the course of a few weeks. But even a week after the onset the knee-jerks had become excessive, and a well-marked foot-clonus had developed on each side. This afforded decisive proof of the existence of an affection of the spinal cord. It is well known that the inflammation of the anterior horns when intense extends to the white columns in their vicinity; a zone of inflammation often separates the grey substance from the healthy anterior lateral column, and occasionally, in cases of cervical polio-myelitis, the extension of inflammation to the lateral column is sufficient to interfere

with the conduction in the lateral pyramidal tract. Occasionally this occurs to such an extent as to cause weakness of the legs and some secondary degeneration, manifested by the excessive knee-jerk and foot-clonus as we had it in this case. I have seen more than one instance of this condition. The symptom in this case was of great importance as excluding the possibility that the affection was a pure neuritis, and making it certain that the inflammation of the nerves was a complication of a true anterior polio-myelitis.

The subsequent history of the case is of little importance for our present object. The symptoms of neuritis passed away, but the atrophic paralysis of the muscles of the arms persisted and has remained permanent, so that now, two years after the onset, the whole left arm is wasted and powerless except for very slight flexion of the fingers. The right deltoid is absolutely paralysed, while the biceps and triceps are also wasted and almost powerless, but the forearm and hand muscles are almost normal. The legs have regained full power and the clonus has entirely disappeared.

I do not know whether the occurrence of multiple neuritis in cases of polio-myelitis has been before observed. Probably it has, but the combination is one of considerable importance and significance both from a theoretical and practical point of view. It is one on which further observations are urgently needed, and to secure this is the chief object I have in bringing the case before your notice.

It is an illustration of the common liability to disease presented by related peripheral and central structures, of which indications are frequently met with—more frequently, indeed, than is commonly recognised. The same morbid agents may act upon the peripheral nerves and upon the grey matter of the cord, and I believe that some cases, which are supposed to be cases of peripheral neuritis, are really cases of central nature—that there is a risk that we may go too far in our transfer of disease from the centre to the periphery, and are in some danger of overlooking central disease in the attention we now pay to the peripheral system. The susceptibility may not only involve the same structures, but it may involve the same parts. I have more than once known a spinal progressive muscular atrophy to commence with a paralysis of the extensor muscles of the forearm precisely like that which is regarded as characteristic of peripheral neuritis.

The mechanism by which cold produces polio-myelitis is a subject on which we know almost nothing. It is but one

instance of a class of morbid influences regarding which it is most important to observe and compare all the facts that we can gather, for it is only by comparing those of various kinds that we can hope to gain any exact knowledge. The phenomena of the onset of polio-myelitis, and especially the severe constitutional disturbance which commonly attends it, and the absence of any proportion between this and the affection of the cord, had led most observers to the conclusion that the mechanism by which the lesion is produced is a blood-state, and it has even been regarded as of the nature of an organised virus, and classed with what are loosely termed "infectious" diseases. But the facts of this case, especially when taken in conjunction with those of other diseases which are produced in the same manner, seem to show that if a blood-state is the mechanism, it must vary considerably in different cases, perhaps even to the extent of a fundamental difference in nature, and that, in many cases at least, a chemical poison is more probable than an organised virus, and that even when the latter is the primary agent it may act by producing a chemical poison to which the effects are immediately due. If neuritis is an occasional concomitant of polio-myelitis it is certainly not an invariable one. Many cases develop and run their course without any tenderness of the limbs and without any evidence of an independent affection of the nerves. There must be a considerable difference in the character of the blood-state which acts upon the cord alone, and that which acts also upon the nerves. Moreover, there is abundant evidence that the same influence may, in other cases, act upon the nerves alone and not upon the cord. We cannot regard these differences as the expression only of a difference in the state of the tissues of the individual. Every analogy points to the fact that they depend upon and prove a difference in the causal influence, like that with which we are familiar in the case of such poisons as strychnine and atropine.

The case illustrates, moreover, the curious double factor of causation of polio-myelitis. The disease may be clearly excited by exposure to cold, but the effective exposure commonly occurs during hot weather. It is a well-established fact that the malady occurs about three times as frequently in the hot third of the year as during the other months. The case, however, also illustrates the curious fact that whatever is the nature of the influence exerted by heat that renders the exposure to cold effective, it is not an immediate

and direct sequence of exposure first to heat and then to cold. The effect of the hot weather is in some way to develop a peculiar susceptibility, in consequence of which an isolated and separate exposure to cold has a special injurious effect which it would not have were it not for the previous influence of heat. The feature in the case that seems especially important is that it is an example of multiple perineuritis, typical examples of which are seldom met with.

If the various forms of multiple neuritis are compared, they fall into two classes, well-defined members of which are sufficiently distinct, although some present features that make a careful consideration needful, in order accurately to assign their position. The two classes may be conveniently termed the parenchymatous and the adventitial. The primary affection in the first is of the nerve-fibres, in the second of the connective-tissue elements, and especially of the sheath. In the former the incidence of the lesion is on the periphery; in the latter on the nerves in their course, and especially in the middle of the limbs and the neighbourhood of the joints. In the former the symptoms indicate an affection of the fibres according to their function, at least in cases in which its degree is moderate; the trunks are tender because their nerves suffer rather than because their sheaths are inflamed. In the adventitial forms the indications of inflammation of the sheath dominate the symptoms, and the fibres of the nerve suffer secondarily, and often in an irregular manner. The difficulty of distinction presented by some cases depends chiefly on the intensity of the affection. The inflammation of any organ, in proportion to its degree, tends to involve all the tissues.

In isolated neuritis, such as severe sciatica, we have a typical example of the adventitial form; in the multiple neuritis, that is caused by a metallic poison or by alcohol, we have a typical example of the parenchymatous variety. The key, as it were, to the pathology of the latter is, however, presented by another feature, which involves an all-important fact of causation. Parenchymatous neuritis is not only multiple; it is also symmetrical. Strict bilateral symmetry is its leading feature, and the significance of this is the dependence of the lesion on a blood-state which acts alike and equally upon similar structures.

The type of the adventitial form of perineuritis is seen in the inflammation of single nerves, such as may be due to gout, and may also be produced by cold. But it occurs also in a multiple form, of which the neuritis of leprosy is a well-

marked example, and that it may also be the consequence of exposure to cold this case sufficiently proves.

The occurrence of parenchymatous multiple neuritis from exposure to cold is a well-established fact, and we have evidence, therefore, that both forms of the disease may be due to the same morbid influence. But the parenchymatous form is certainly the result of a toxic blood-state, and it can hardly be doubted that this is also true of the adventitial form. It is important, in future observations, to endeavour to ascertain what differences can be discerned in the manner in which the two forms develop when they are thus produced, the interval that elapses between the exposure and the onset, and especially the associated lesions that are met with in connection with the one or the other, and which are important indications of the nature of the mechanism by which they are produced. Acute pneumonia and enlargement of the spleen, such as is met with in the most toxæmic diseases, have been associated with the parenchymatous form. The concomitants of the adventitial form have yet to be ascertained; this case shows that myelitis may be one of them. *A priori* we should expect to meet with the lesions of acute rheumatism in this association, but the point awaits future observation. Neuritis associated with acute arthritis is generally supposed to arise by extension. It is possible that a primary inflammation may sometimes have escaped notice.

In connection with the occurrence of an adventitial neuritis in association with polio-myelitis, another point deserves mention as calling for future observation. Recent researches on the pathological anatomy of the spinal malady suggest that cases differ in the precise elements of the grey matter that are the chief seat of the inflammation. In some cases the nerve-cells suffer primarily, and the tissue in which they lie is affected but little or not at all; in others this ground-substance of the cornu is apparently primarily involved. Whether this is a difference in nature or in degree remains to be ascertained, but there is an obvious analogy between the inflammation of the supporting tissue of the grey substance, and of the adventitial tissue of the nerves, and it may be that it is in cases in which the whole grey matter is affected that such neuritis tends to occur as was met with in the case I have described. The association is the more probable because, in this case, the obvious extension to the white columns shows that there must have been an inflammation of the whole tissue of the cornu.

Yet another difference in the mechanism, through which

the two forms of multiple neuritis are produced, is suggested by the general facts of the disease. I ought, perhaps, to apologise for these multiple suggestions, but my chief object in bringing the case forward is to direct attention to the problems which may most profitably be considered by those to whom opportunities for observation present themselves.

Multiple neuritis may be due to the influence of specific organisms on the tissue of the nerves. The neuritis of leprosy is proof of this. It may also be due to the preceding presence of organisms in the blood, and it is then probably due to a chemical poison produced by the organisms and left behind by them. The latter seems to be the mechanism in most of the parenchymatous forms. Most of these succeed the symptoms that indicate the presence of organisms in the system, and are probably due to a virus resulting from this growth, and comparable to the most common and most potent cause of such neuritis, the alcohol that is produced by the growth of organisms outside the body. It is possible that the less symmetrical adventitial forms are due to the organisms themselves, which act directly on the connective-tissue elements of the nerves, as does the bacillus of leprosy. Important evidence on the point may probably be obtained from the study of the changes in diphtheritic paralysis. In the diseased nerves, sometimes the nerve-fibres, and sometimes the adventitial tissues, are most affected, although the difference is not seldom obscured by the acuteness of the process. If the fact just mentioned is true of this disease, the neuritis that occurs during the primary disease should be chiefly adventitial, being due to the local influence of the organisms of diphtheria, while that which succeeds the malady at an interval of time should be chiefly parenchymatous in nature, the result of a product of the growth of the specific organisms. A similar problem is presented by some other diseases, although few others are likely to afford a similar opportunity of bringing the question to the test of observation. But a special interest attaches to the analogy that we may discern in the effects of syphilis, in which we may have apparently sometimes an isolated or irregular adventitial neuritis, such as the organisms themselves may produce, and also a latter parenchymatous degenerative form as part of the lesion of tabes, due to a product of the growth of the syphilitic organisms, and hence resisting, as it unquestionably does resist, the therapeutic agents that so quickly arrest the adventitial process.

XXVI.—*A case of Symmetrical Gangrene of the Feet from obliterating disease and thrombosis of the arteries and veins: amputation through the knee-joints: recovery.* By A. Pearce Gould, M.S. *Read March* 13, 1891.

On February 8, 1890, Dr. Mickle asked me to see, with him, G. B., one of the inmates of Grove Hall Asylum, who was suffering from gangrene of the feet. The man was forty-three years of age, a draper's traveller by occupation, and we learnt that with two exceptions he had enjoyed good health up to the time of his illness. On one occasion he had been under Dr. Mickle's care with delusions, but had made a good recovery. Soon after Christmas he was taken with influenza, which left him very depressed and weak, and he quickly became distinctly mad. His father died at the age of forty-eight from heart disease, and his mother at the age of fifty-four. Of his six brothers, one only was alive strong and well, and one each had died of asthma, typhoid fever, paralysis, and consumption, and one had died in infancy. Of his two sisters, one was strong and well; the other died abroad in 1858, cause unknown.

G. B. was admitted into Newington Infirmary late on January 22, 1890, suffering from acute mania, which his wife stated had existed for four days. On the 23rd he became dangerous to himself and others, and Dr. J. F. Williams, to whom I am indebted for these particulars, ordered the application of a strait-jacket. At night it was found necessary to put on manacles, which Dr. Williams describes as wristlets which are strapped to the bed with a very broad leather belt across the chest. These were removed in the morning. There is no record that his legs were secured in any way, but "if restraint to the legs is ever necessary, it is always done with a sheet. Manacles are never used." When he was admitted the following was noted:—"Several bruises on inner side of left leg and several also on the right. There is bruising on lateral aspect of ribs caused by his struggling to get out of bed."

On the 24th of January there was also noted superficial bruising of wrists caused by the manacles. On that day he

was removed to Grove Hall Asylum, and he walked without any difficulty from the ward into the conveyance.

When he came under Dr. Mickle's care he was the subject of hallucinations and violent mania. It was noticed that he limped, and there were a few bruises about his legs and other parts which were considered to explain this. But on January 29 he complained of severe pain extending from the right knee down the leg to the foot. On January 31 the right foot was noticed to be cold, blue, and mottled, and no pulsation was felt in either tibial artery. He now complained of pain in his left foot. On February 2 the right foot was distinctly gangrenous; the left foot was cold and blue, it also became gangrenous, and the mortification extended on each side to above the malleoli. When I saw him the legs pitted on pressure quite up to the knees, and for some two or three inches above the gangrene the skin was cold, with patches of a livid colour and very sluggish circulation. No pulsation was felt in the right popliteal artery; on the left side the artery pulsated down to the level of the knee-joint, but not below this. Dr. Mickle stated that the man lost his hallucinations and mania when the pain came on in his feet. The legs were carefully swathed in cotton-wool, and hot bottles were placed in the bed: nourishment was freely supplied to him, and opium was administered internally. The gangrene, however, spread, and on February 22 he was transferred to Middlesex Hospital under my care.

State on admission to hospital.—The man was a fairly healthy-looking man; no grey hair or other obvious signs of age. He was quiet and clear in his mind. Tongue clean and moist; he took liquid food well; bowels rather costive. His temperature was 100·6°; it had ranged between 100° and 101° all through his illness. His pulse was 88, regular, of fair volume and force. The heart sounds were normal; the brachial arteries were free from obvious disease; there was no sign of any external or internal aneurysm. The urine was acid; sp. gr. 1015 to 1025; free from albumen and sugar.

The condition of the legs was as follows:—The toes of the right foot were "mummified;" the skin of the sole and heel was black; the dorsum and sides of foot and ankle to just above the bases of the malleoli were mottled blue and plum-coloured; there were no vesicles, no separation of epidermis, no crackling; but the tissues were soft, although they did not "pit" on pressure. Above this was a zone of skin half an inch wide, slightly reddened, with patchy vesication.

The leg above this was emaciated, but warm. The pulse could be plainly felt along the whole length of the femoral artery, but the popliteal artery was a hard pulseless cord.

The left foot was gangrenous to the same extent, but only the very tips of the toes were "mummified." Over the dorsum of the foot the cuticle had separated, and exposed moist stinking cutis. There was a red zone of demarcation just above the malleoli. Above this the leg was œdematous. Pulsation could be felt in the popliteal artery as low as the head of the tibia. The man was quite free from pain. A consultation was held, and it was decided to amputate both legs through the knee-joints, and to remove first the left limb, as on that side the parts were moister.

On February 26 the left leg was amputated through the knee-joint by Stephen Smith's method. The popliteal artery where severed was full of clot, but, as pulsation had been felt almost to this spot, I thought it safer to twist the end. Next morning the temperature was 101°, but it quickly fell to, and remained below, 99°. On March 5 the right leg was amputated at the same place and by the same method.

The convalescence was slow; in the left stump a small accumulation of serum in the synovial cavity occurred, and a short sinus, leading into the joint, remained unhealed for some time. A small but deep portion of the outer flap of the right stump sloughed, and this delayed the complete healing of the right stump. The man's general condition steadily mended, and he left the hospital on May 7 to go to Bognor Convalescent Hospital, with the stumps painless and firmly healed, and his general health good.

The legs were dissected by the pathologist to the hospital, Dr. Sidney Martin, and the following report on the condition of the vessels is from him:—

Left leg.—*Peroneal artery* is plugged by adherent decolourised clot for its upper 2 inches; the companion *veins* also contain a similar clot, which, however, is less adherent. Microscopical examination showed that the intima and media of the artery were thickened in places. The thickened intima projected into the lumen of the artery. The thickening of the muscular coat was only slight and partial. The intima of the veins was irregularly thickened by an increase of fibroid tissue; in parts there was an increase of connective tissue in the muscular coat.

Posterior tibial artery was thickened at its upper part; it was plugged by a black non-adherent clot in the lowest

third of the leg. Microscopically the upper part of the artery was found to be in the same state as the corresponding portion of the peroneal artery. The lower part of the artery, containing the black clot, was normal in structure. The intima of the *venæ comites* was very greatly, although irregularly, thickened, and the veins were plugged by organising adherent clot.

Anterior tibial artery contained black loose clot in its lower half; a section from the middle of the artery was normal in structure. The *venæ comites* show slight irregular thickening of the intima—no clot.

Arteria dorsalis pedis at edge of line of demarcation showed fibroid thickening of intima with rupture of elastic lamina. There was round-celled infiltration of the walls of the *veins* in several parts up to the intima. The intima itself irregularly thickened as in posterior tibial veins. Adherent organising clots in both artery and veins.

RIGHT LEG.—*Peroneal artery* shows a ridge caused by thickened intima which is increased by excess of fibrous tissue and of round-cells; elastic lamina intact. Adherent clot.

Veins.—Intima irregularly thickened by fibrous tissue—adherent clot.

Posterior tibial artery.—The upper part is in the same condition as *peroneal artery.*

Anterior tibial artery and veins normal—no adherent clot.

Dorsal artery of foot involved in gangrenous tissue.

No calcareous degeneration of any of the vessels. The smaller arteries and veins show a fibroid thickening of the *intima* with narrowing of the lumen, and in some places they are almost occluded. This change is, on the whole, more marked in the veins than in the arteries. It may be described as a wide-spread end arteritis and endophlebitis affecting both large and small vessels.

Remarks.—Two points call for comment — the cause of the gangrene, and the treatment pursued.

The ultimate cause of the gangrene is obscure, but the ground can be cleared by rejecting certain well-known causes. It was not due to atheroma, calcification of arteries, diabetes, ergotism, or Raynaud's disease. All these conditions were absent. In reference to Raynaud's disease, the "symmetrical gangrene" of which is at once suggested in this case, I could not learn that G. B. was subject to cold feet, or any attacks of the typical ischæmia, nor has he ever passed blood-coloured urine. The man had received certain contusions of the legs before he came under treatment, but it certainly cannot be

regarded as an example of traumatic gangrene in the ordinary acceptation of that term—there was no grave injury to main blood-vessels, no spreading thrombosis, no acute septic gangrene.

Dr. Martin's microscopical specimens of the vessels of the diseased limbs show the existence of a wide-spread disease of the inner coat (and to a slighter degree outer coat also) of the arteries and the veins. This led to partial obliteration of the lumen of the vessels, which was made complete by secondary coagulation of the blood within them. The change in the vessel-walls is far more intense than that associated with the organising of a thrombus, and it must be regarded as a primary obliterating arteritis and endophlebitis. But how was this vascular disease set agoing? There is no history of syphilis in the patient, nor any sign of it. He had some venereal sores on the prepuce twenty years ago, and a gonorrhœa and suppurating bubo in the left groin at the same time. But there was no subsequent rash, periostitis, alopecia, sore tongue, ulcers, or gummata. He has had repeated "sore-throat," but this has been only in the winter, and is apparently traceable to "cold."

Very little is known of the causes of primary obliterative arteritis. In the seventeenth volume of the 'Transactions' of this Society, Dr. Hadden and I each recorded a case of this disease leading to gangrene, and in my paper will be found a brief *résumé* of other recorded cases. Prolonged exposure to cold seems to have been the most potent cause of this malady, but except for the time of year when G. B. was attacked, we have no evidence that this was the cause of his trouble. But it may have been. One possible etiological factor must not be overlooked—the influenza. His whole illness—the depression of spirits, and then the hallucinations, and quickly following upon that, the gangrene—followed upon an attack of influenza, and I cannot help attaching weight to this fact.

In placing this case in the same category as those previously recorded as due to primary obliterative arteritis, we must not ignore the fact that in some of its clinical features it offers a striking contrast to them. It is the only instance in which two members were attacked. Its abrupt onset, and the wide extent of the gangrene, are unlike the very slow course, limited extent, and gradual spread of the gangrene in all the other cases. These differences are just what might be expected where the cause of the vascular disease was some

intense blood-poison like that of influenza, instead of the more benign influence of external cold.

It is interesting to notice the variety of gangrene produced by this simultaneous obstruction in arteries and veins—"dry" at the tips of the toes only, and an intermediate condition between "dry" and "moist" gangrene elsewhere. On the left side the gangrene was moister than on the right; a fact which probably finds its explanation in the obstruction of the main artery not extending above the level of the knee-joint, so that several branches of the popliteal artery were patent on that side which were occluded on the other, and helped to carry a freer supply of blood to it.

The case also shows the need for examining very carefully and by means of the microscope the vessels, both arteries and veins, in all cases of spontaneous gangrene. It is probable that if that were done, we should find such obliterative disease as we have in this case to be a not infrequent event, and light might be thrown upon the pathology of other forms of gangrene, such as that following the acute specific fevers.

The treatment pursued in this case—amputation at the joint above the gangrene, without waiting for the dead part to undergo spontaneous separation—is directly contrary to the rule laid down in most precise terms by Erichsen and others as the constant rule in spontaneous gangrene. Such a rule has been justified by many excellent recoveries, and it is possible that some surgeons may think I was wrong in departing from it here. I was led to do so by reflecting, 1st, that the dead parts were a source of danger to the living, that a certain degree of sapræmia was resulting from the continuity of dead and living; 2ndly, that the extent of the obstruction of the main vessels was clearly defined and well limited, so that I had a good ground for believing that if I amputated through the knee-joint I should cut through well-nourished healthy tissues, and run no risk of any recurrence of the sloughing in my flaps; 3rdly, the particular amputation (Stephen Smith's) not only affords good stumps, but is attended with but slight constitutional disturbance; 4thly, saving of time. Stephen Smith's method of amputation through the knee-joint is so widely practised and highly appreciated that it is not necessary to defend my choice of that operation. On the left side I met with the most frequent cause of troubles after this operation—retention of serum in the synovial cavity. This is to be prevented either

by very free drainage or by the most carefully applied dressings, and it is eminently a case where "prevention is better than cure." The stumps are very serviceable to him, and the man gets about on two "pins."

XXVII.—*Three cases of Septicæmia due to Sewer Gas.*

By C. MANSELL MOULLIN. *Read March* 13, 1891.

ALFRED F., æt. 12, admitted October 9, 1889, with a compound comminuted fracture into the right ankle-joint. The wound ran across the front and the outer side, exposing the dorsalis pedis artery. The extensor brevis digitorum was torn, the anterior ligament lacerated, and the lower end of the tibia splintered in front.

The treatment adopted, after the wound had been thoroughly cleansed and examined, consisted in placing the foot bodily in a bath of perchloride of mercury (1 in 10,000) for two hours night and morning, the limb in the meanwhile being packed in wood-wool. This is the plan that I have followed out in a large number of compound comminuted fractures into joints, with, until the present case, perfect success, and entire absence of fever or suppuration. The wound in this instance became offensive, and on the fifth day the gums showed signs of becoming spongy, so that the mercurial bath was left off, and boracic acid substituted, with this difference, that the limb was now kept in it continuously day and night.

The temperature, which was normal on admission, began to rise the same day. In the evening it was 99° F.; the next morning 100°, and 102° at night; but then, instead of continuing high, it assumed at once a remittent character, falling nearly to normal of a morning, and rising to 102° or 103° every evening, with the regularity of hectic, but without any suppuration or sloughing to account for it.

Twelve days after the accident, on the evening of the 20th, while the foot was still immersed in the boracic bath, the patient complained of some stiffness about the jaws. The next day the foot was removed from the bath (all offensive odour had disappeared, but of course everything looked sodden and white from the prolonged immersion), placed on an inclined plane, and covered with lead lotion. The immediate effect was a rise of temperature to 104° F., the pulse rate going up from 108 or 110 in the minute to 140. The bath was commenced again, and as the temperature did not fall at once, the wound was laid freely open. After this the

temperature resumed its former remittent character, but the stiffness of the jaws and the inability to protrude the tongue became worse and more marked; the head began at the same time to be retracted, and the appetite, which had up to the present been fairly good, began to fail.

On the 29th (three weeks after the accident) the foot was taken out of the bath again, with precisely the same result, so far as the temperature was concerned. The jaws had now become so fixed that the tongue could not be seen. The patient was losing ground rapidly; and, consequently, on the 31st Teale's amputation was performed in the lower third, the stump being dressed with iodoform and wood-wool, and the patient placed in another part of the ward. The symptoms of tetanus began to subside at once; the temperature fell to normal on the second day; and except that the wound healed very slowly, there is nothing further to mention in the case. The power of opening the mouth and swallowing began to improve on the second day, but it was some time longer before the pained expression disappeared from the face, and it was nearly a fortnight before the muscular rigidity completely disappeared.

George H., æt. 52, admitted on November 6, 1889, with a large, cold, subgluteal abscess, probably originating in the bursa. It was opened on the 9th, about 18 oz. of a thin serous fluid, slightly turbid with flakes of caseous matter, evacuated, and a drainage-tube (half-inch diameter) passed across the cavity. The dressings were not removed until November 12. They were then taken off and the wound syringed with carbolic acid. The same evening the temperature, which had been practically normal, rose to 102°; the following evening it was higher still, and then it began to assume the same character as in the former case, only, though the daily variations were equally marked, the morning temperature never fell much below 101° F. The wound in the meanwhile showed absolutely no change; there was no inflammation or redness around it, and there was no suppuration, simply a serous discharge. On the 16th the patient was placed under an anæsthetic again and a more thorough exploration made, considering the possibility of there being some deeper-lying sac; but though other incisions were made nothing was found to account in any way for the fever; there was merely a smooth-walled sac secreting a little thin fluid. After this the temperature rose higher and higher, still

retaining the same character, but without any more evidence of inflammation than there was before, merely a little redness round each incision until the 23rd, when it fell to normal as the patient died.

Post-mortem examination revealed no sign of embolism, suppuration, or internal inflammation. The only visceral lesion was a granular condition of the kidneys, and there was nothing in, or around, the wound to account for the symptoms.

Frederick S., æt. 17, admitted on December 2, 1889, with a compound dislocation of the metacarpal bones of the fingers of the right hand caused by a printing machine. The chief wounds were on the dorsal surface and the outer side. The extensor tendons were exposed, some of them torn, and the intercarpal joint opened as well as the metacarpal.

Immediately after admission the limb was placed in a perchloride bath, and kept in it continuously night and day for three days. At the end of that time it was thought that sufficient corrosive sublimate had been absorbed by the dead tissues to prevent putrefaction, and the hand was taken out in the afternoon and dressed with iodoform and wood-wool. That night the temperature, which had been perfectly normal, went up to nearly 101° F.

The bath was resumed and the temperature fell to normal again. On December 10 (eight days after admission) exactly the same thing happened.

On December 14 a boracic bath was substituted for the perchloride one, and that evening the temperature rose to 103·6°, and the next morning to 104·3°.

On the 16th (a fortnight after the accident) the patient was anæsthetised, and suppuration found in the palm under the deep palmar fascia. Free incisions were made, and as the boracic bath did not seem of much use, the hand was placed in one of thymol, and then, as the temperature did not fall, in one of perchloride again. In spite of this the temperature continued to fluctuate between 102° and 104° until December 20, when secondary hæmorrhage occurred from the deep palmar arch, and it was decided to amputate at once. The wound was washed out thoroughly with hot perchloride lotion and dressed with iodoform and wood-wool; but the patient was brought back to the same bed.

The temperature fell to normal at once as in the first case; two days afterwards it rose to 102° F., and on the third was nearly as high as ever.

The patient was now removed to another part of the ward, but although the wound remained perfectly free from odour, and the flaps remained healthy without any suppuration or an excessive amount of discharge, the temperature continued to rise, and rigors followed, two each day, with a regularity almost as marked as in ague. The patient died on the 30th, ten days after the amputation. No post-mortem examination was allowed, but there was nothing during life to lead to the suspicion of secondary abscesses. During the last four days there was profuse diarrhœa, and on the last two in particular, hurried shallow respiration; but there was no pulmonary or cardiac friction, no bronchial breathing or rusty sputum, and no increase in the area of dulness.

These three cases of septicæmia occurred consecutively in the same bed; there has been no case since, and I could find no evidence of any having occurred before. In the same ward (in different parts of it) were numerous other serious accident cases. In the beds immediately opposite (but on what I shall call the windward side) were two especially serious; one of compound comminuted fracture of both legs, from a railway accident, and the other of a primary amputation of the leg, trephining, and compound fracture of the jaw at the same time; but neither of them suffered in the least; the temperature did not rise over 100° F. The bedsteads were scoured; the mattresses baked and the clothing changed after each case. The dressers of the cases were not the same, and no such things as ward sponges were allowed. I believe myself, and Dr. Parkes, who inspected the drains of the building at the request of the Hospital Committee, and entirely independently, without knowing what had happened, condemned absolutely the next bed, agrees with me, that these cases can be definitely attributed to an escape of sewer gas.

The wards are double, divided into an east and a west half by a brick wall in which there are large open archways at intervals to allow of free communication. The bed in question was in the eastern half, against the dividing wall, with its head close to one of these openings.

In the western half, about four feet from the partition wall, and nearly opposite the opening, was a trap-door, which led down into a space beneath of considerable size, and occupied by a cistern. Opening into this, level with the top of the cistern, was a vertical pipe to carry off the overflow. The cistern supplied a w.c. in the basement. The pipe ran

down, without any trap or bend, into an old brick sewer, which, at some long distant period, had been adapted to receive the waste pipe of the w.c. It had been, however, very much larger than was required (apparently it had belonged to a long since forgotten system of main drainage), and though its size had been reduced to some extent, it was still larger than the part beyond, and thus practically formed an elongated cesspool, never emptied, cleared out or flushed, which ventilated itself, and also the main drain of the wing, directly through this overflow pipe into the space beneath the flooring.

It is true this bed was not the nearest to the trap. There was one partly standing over it; but on sending a man down into the space beneath it was found that there was an exceedingly strong draught, setting eastwards, directly towards the bed in the eastern half. Possibly this and the fact that the crevices between the boards were tightly packed with flue and dirt saved the one immediately over it.

The last case broke out on December 14 (though the temperature had shown a tendency to rise on two previous occasions); the pipe was sealed up on the 17th.

Unfortunately there is no novelty in the effects of sewer gas, but it seldom happens that such a striking series of cases from which other elements can be practically excluded can be made out. The first was admitted on October 9, the second on November 6, and the third on December 2. The first recovered after amputation; the two last died, one of these being, like the survivor, a previously healthy boy. There was no other case in the ward.

In addition to this, however, there are some points of interest in connection with the outbreak and with the clinical symptoms.

The poison seems to have been absorbed through the wound. The fever certainly did not break out until this was exposed; then it did at once. In the first and last this is very marked; in the former case (in which the baths were not continuous) the temperature rose immediately after admission and at once assumed a remittent type; in the latter, treated with continuous perchloride baths, it remained normal until the limb was taken out, then it rose at once. Even in the other case, in which from the nature of the trouble this could not be so plainly shown, the outbreak did not occur until the first dressings (which were extensive and covered the skin for some distance around) were removed.

The poison did not appear to cause local inflammation. In the second case (that of the subgluteal abscess) there was certainly none; in the others, owing to the plan of treatment adopted this was less conspicuous, for, of course, the skin became reddened and sodden from the continued immersion, but in neither was there any cellulitis spreading up the limb, or any diffuse lymphangitis or phlebitis.

The poison certainly encouraged putrefaction. As a rule immersion in a perchloride bath (1 in 10000) for two hours a day is sufficient to prevent decomposition; the dead tissues absorb sufficient of the salt to preserve them for much longer periods. In these, however, although the immersion was kept up in the one case twice as long, and in the other continuously, in the former the wound became offensive, and in the latter it was certainly suspicious, when lifted out from the bath, on more than one occasion. The latter, too, was peculiar in this, that actually while the hand was continuously submerged in a perchloride bath, a focus of suppuration formed under the palmar fascia. It was this that led to the secondary hæmorrhage.

In the last case the boracic bath seems to have been entirely inert, so far as preventing the action of the poison was concerned. The first day in which it was tried the temperature rose to 104° F., and that within a few hours.

The clinical symptoms in all three were (with two exceptions) very much alike—remittent fever rising every evening to 102° or 103° F., and falling of a morning to about 100° F. Throughout there was no evidence of embolism, phlebitis, or metastatic suppuration; nor was there any pleurisy, pneumonia, or pericarditis. One patient suffered towards the end from severe diarrhœa.

The two exceptions were the tetanic symptoms in the first case and the recurrent rigors in the last. What the cause of the first of these may have been must remain an open question. With such a wound, compound comminuted fracture into the ankle-joint, it is quite possible that some nerve was irritated. On the other hand it is equally possible that they were the result of some poison acting upon the nervous system. The limb was painful as might have been expected, but there was never any spasmodic twitching. From first to last the symptoms were general ones of the ordinary character, affecting the muscles of the face and jaws, and spreading to those of the neck and back. That the symptoms began to subside after the amputation is consistent with either view.

The rigors are still more perplexing; for a week they occurred with the greatest regularity, night and morning, without apparently meaning anything.

I may add that Dr. Parkes' discovery of the condition of things was entirely independent, made during a general investigation into the sanitary condition of the hospital, which had been ordered by the House Committee, who were dissatisfied with the drainage and who were taking the best possible steps to rectify it; and that when I, in my turn, without knowing what Dr. Parkes had found, began to cast about for some cause for a series of disasters I could not explain or understand, the condition of affairs had already been ascertained and, so far as could be at the time, set right.

XXVIII.—*Popliteal Aneurism in a youth aged seventeen years.* By Arthur Trehern Norton. *Read April* 10, 1891.

G. E., æt. 17, a parcel post boy, was admitted on April 11, 1890, with a pulsating swelling in the popliteal space and inner side of the left thigh. He gave information to the effect that his father had several fatty tumours, and his sister a tumour behind the knee like his, but it turned out that the sister had an exostosis in the space. In August, 1889, he entered the service in which he was now employed, and he stated that he travelled continually by train, always jumped out before the train had stopped, and generally jumped on the left foot. In the same month he noticed pains in the left knee, but took very little notice of them. On March 3 the pain was worse than it had been hitherto, and he then recognised a lump beneath the knee-joint. The lump increased in size when walking, but lessened after a night's rest. From that date to April 8 it grew larger, and he was then quite unable to work.

Condition on admission.—Patient lay in bed with left knee flexed and resting on the outer side. There was no difference in the muscular development of the two legs, but the cutaneous veins were more marked in the left leg than in the right. Commencing immediately above Hunter's canal, occupying that canal, and extending into the popliteal space, was a swelling somewhat irregular, but pear-shaped. The part occupying Hunter's canal seemed to be an enlargement of the femur, and on pressure it could be diminished in size, but a part of the tumour still remained. That part of the tumour occupying the popliteal space, which it might be said to fill, was very distinctly more compressible than the rest, and gave to me an unmistakable impression of an aneurism being almost completely emptied. The tumour pulsated in all directions, the pulsation being very distinct on both sides of the knee.

The measurement of the limb around the tumour was 14¼ inches, as compared with 13 inches in the corresponding position of the sound limb. A blowing sound was heard over the

whole tumour. The pulses in the posterior tibials were synchronous, but the left was weaker than the right.

Wrist pulse 60. Temperature normal. Urine normal. Tongue clean. Appetite good. The glands in both groins were somewhat large, and one gland could be felt under chin.

There was a difference of opinion as to the character of tumour. My own view was that it was unquestionably an aneurism commencing in Hunter's canal, and extending down into the popliteal space, and the enlargement of the femur felt through the tumour after compression, I was inclined to look upon as periosteal infiltration. Others formed the idea that it was a pulsating sarcoma, because it could not be diminished to the extent usual in aneurisms. I argued that though it could not be diminished by pressure so much as an aneurismal cavity should be where in relation to the femur, yet in the popliteal space it could be so undoubtedly, and in fact was in that region unrecognisable during strong compression. The age of the boy, seventeen years, was against aneurism, but early age admits of aneurisms in other vessels, and rare instances might occur in any vessel, even the femoral or popliteal. The very marked dilatation of the whole tumour at the pulse beat was greatly in excess of what takes place in pulsating sarcoma.

In consequence of the opinion expressed by my colleagues, I determined only to keep the patient at rest for a while, and to watch the tumour.

Measurements.

	Left thigh.		Right thigh.
At upper border of patella . . .	13¼	...	12¾
2½ inches above patella . . .	14½	...	13
5 inches above patella	15¾	...	13¾

Some of the swelling was due to œdema in the upper part of the thigh, and the popliteal space was also somewhat œdematous.

On April 18, after six days in bed, some of the œdema had subsided, the pain had disappeared, and it was suggested that the tumour was a little decreased in size. He was ordered meat diet of 10 oz. per diem, and one pint of fluid. Pot. Iod., gr. x ter die.

On the 29th I tied the femoral artery. On the following day the patient had not had a good night, and acetate of morphia had been injected. Pulse was 80, and tongue coated.

On May 5 the sutures were taken from the wound, which

had healed by the first intention. Pulse was 60; pulsation had returned in the vessels below. There had been no elevation of temperature and no untoward symptom. The measurement immediately above patella reduced to 12½ inches.

On May 8 measurements—

	Left thigh.		Right thigh.
Upper border of patella . . .	12½	...	11½
2½ inches above patella . . .	13½	...	12¾
5 inches above patella	14½	...	13¾

The right leg not having been used had become slightly reduced in size, and the left leg was considerably reduced in size by the diminution of the tumour.

Towards the fourth week from the time of the operation he walked about, and went into the garden.

On June 21, seven weeks after the operation, measurements were—

	Left thigh.		Right thigh.
Above patella	12¾	...	12½
2½ inches above patella . . .	13½	...	13¼
5 inches above patella	16	...	15¾

The position of the former tumour in the popliteal space was scarcely to be recognised, but in Hunter's canal could be felt a small exostosis or edge of bone projecting beyond the surface of the femur. Both thighs had increased in size by use.

It is more than probable that this exostosis was the cause of the vessel giving way at that part, and thus forming the aneurism, and thus the peculiarity of an aneurism in a person of seventeen years of age.

Note (June 16, 1891).—The patient at the present time is a strong healthy young man following the employment of a railway porter.

XXIX.—*A case of Calculous Suppression of Urine with double Pyonephrosis: nephrolithotomy on both sides at one sitting.* By G. R. Turner. *Read April* 10, 1891.

HARRIET B., æt. 45, cook, was admitted into St. George's Hospital, under the care of Dr. Whipham, July 21, 1890. She had led a very intemperate life and had suffered from symptoms of renal calculi for about five years—pains "like labour pains" in the right loin and groin accompanied by retching—occasional hæmaturia, especially after these attacks and after exertion.

She had passed by the urethra many small calculi of irregular shape, not facetted, apparently phosphatic, the largest being three quarters of an inch in length.

No calculi, however, had been passed for the last year, but the pain had continued with much vesical discomfort. Her urine was generally copious.

Three days before admission she had a severe attack of pain in the right loin and groin, and was seen next day by Mr. Cahill, who reported that the urine was acid and slightly smoky. She had passed hardly any during the twenty-four hours prior to admission.

She was fairly nourished, but rather weak and drowsy, with a dry tongue but with no urinous smell in breath. There was a large abdominal tumour in the right flank and a smaller one on the left side. Both of these were evidently renal and very tender when examined. She was given by Dr. Whipham diuretics, jalap, elaterium, a vapour bath, and a subcutaneous injection of pilocarpine, but on July 23, no water (except a small quantity, offensive, bloody and purulent, which was drawn off by catheterisation) having been passed, it was decided at a consultation to cut through the loins on to the renal tumours. The bladder before operation was proved by the use of the catheter to be quite empty. Ether was given and the left kidney was first attacked. There was a large pyonephrosis on this side, the pus being of a most offensive character. A large calculus weighing ℥vij ʒij was after some time and trouble extracted, and the renal cavity washed out, by means

of the irrigator, with warm water; no other stones could be felt by the finger on this side. A large drainage-tube was inserted and the loin wound stitched up. The right side was then dealt with in a similar manner. Pyonephrosis present here also, but there was less pus, and what there was, was less offensive. Two rounded calculi weighing some 3v were extracted. The woman's condition was such as to forbid any prolonged search for others which were thought to, very probably, be present, though none could be felt. In all 2 oz. 2 dr. 10 gr. of calculous material was removed. She rallied well from the operation, and a considerable quantity of urine came away from the drainage-tubes in the first twenty-four hours. About an ounce was drawn from the bladder by the catheter. On July 27 she passed a large quantity of urine by the urethra, 3125 c.c., blood-tinged, alkaline, and containing 13·4 grammes of urea.

The wounds did well, and the patient's general condition was satisfactory until August 1. She had passed on the 28th, 620 cc., on the 29th, 190 cc, on the 30th, 400 cc. of urine by the urethra. She became rather suddenly prostrate on the latter day and passed no urine naturally, though a quantity of it, and an increased discharge of pus, came from the loin wounds. She lost appetite, vomited occasionally, and had a weak pulse of 112, with a red-glazed tongue. The amount of urine discharged from the drainage-tubes lessened, especially on the right side. I explored the left side with a large probe, which passed freely into the renal pelvis for some four or five inches, but I could detect no stone. Exploration on the right side showed blocking of the drainage-sinus by two calculi about the size of hazel nuts. These were removed, and some pent-up pus and urine escaped. There was but a temporary improvement in the woman's condition. She remained weak, low, without appetite, occasionally vomiting, and died on August 3, eleven days after the double nephrolithotomy.

She had no convulsions nor any urinous odour of the breath. There was practically no rise of temperature after the operation, her pulse, however, was always rapid and weak.

Post-mortem examination showed the *right kidney* to contain four stones lying in distinct cavities—the renal substance almost absent—the ureter on this side was patent.

The *left ureter* about an inch from its commencement was plugged by a stone about the size of a filbert. The kidney

on this side was the seat of extensive subacute interstitial nephritis. Dr. Rolleston, who kindly made a microscopical examination reports, that he found "numerous triangular wedges of interstitial small cell infiltration," between which there were "dilated convoluted tubes with their lining epithelium flattened and in many cases absent."

It should be noted that the cavities in the right kidney containing the stones communicated during life with the pelvis by but small apertures, and the calculi could not be felt from the loin incision.

The chief interest of this case lies in the fact that stones were taken from both kidneys at one operation, and I have been unable to find a similar case. Dr. Newman, of Glasgow, has collected in all some 102 cases of renal calculus that have been submitted to operation. He divides these into—

	Cases.	Recoveries.	Deaths.
Pyo-nephrolithotomies . .	60	34	26
Nephrolithotomies . . .	42	42	—

He tells me that he is unaware of any case similar to the one I have related. I was induced to cut down on both kidneys at one time from having seen another case of calculous suppression of urine, treated by but one nephrolithotomy, succumb soon after the operation with the opposite renal pelvis choked with stone. The mere making of a second loin incision such as is necessary to expose the second calculous kidney should not, I submit, add much to the shock of the operation; and if that kidney is already mechanically prevented from performing its natural functions, the abstraction of the impediment is the only means of their restoration. To relieve but one kidney—and that often a damaged organ—in these cases of calculous suppression cannot be, I think, the best surgery. I removed, in my case, all the stones I could feel; I should have done better, I now believe, had I been more daring and prolonged both my incisions and my search.

In conclusion, I would submit that in most cases of calculous suppression of urine *both* kidneys should be examined and if possible relieved (if the general state of the patient after operation on the first is not such as to contra-indicate this), and that it is most necessary that both sides should be attacked in cases where pyonephrosis and perhaps an irretrievably damaged organ is first found.

The surgeon who operates on one side only, leaves on the other either—(*a*) a capable kidney, save for the blocking

stone; (β) or one capable of some little excretory work but for the mechanical impediment; (γ) or an incapable one—cystic—pyonephrotic, hydronephrotic, &c.

If, indeed, it is obvious from the beginning that one kidney is hopelessly disorganised, I would not advocate even its exposure from the loin, much less a nephrotomy which might complicate or render impossible a subsequent nephrectomy, but if there is any hope of getting work from it (sufficient work to make up for increase of risk caused by a second incision), I would submit that that incision should be made, so that, even if the patient's condition should forbid a nephrolithotomy, his suppression of urine may be relieved by a nephrotomy.

XXX.—*Eight Cases of Nephrolithotomy.* By W. H. A. Jacobson, M.Ch. *Read April* 10, 1891.

THESE cases are intended to follow the four of nephrolithotomy published by the same writer p. 198, Pls. IX and X of the twenty-second volume of the *Transactions.*

Case 1. *Symptoms of renal calculus for five years: nephrolithotomy: patient æt.* 50: *calculus* (*oxalates,* 14 *grs.*) *in top of ureter: recovery.*—J. A., æt. 50, was sent to me, September 23, 1889, by Dr. Phillipps, of Faversham. About five years ago he first noticed a sharp pain in his left lumbar region shooting down to the groin. This has been repeated at intervals ever since, the intervals being irregular, and varying up to a fortnight or three weeks. They have been gradually increasing in frequency and intensity, and have recently been accompanied by severe nausea and vomiting lasting for periods up to two hours, after which the pain disappears suddenly and entirely. He has never passed any calculus, nor noticed any gravel. During the attacks the urine has frequently been thick like tea, and often bloody. At these times micturition has been very painful. He has had to give up his work (that of a Kentish labourer) as it brings on the attacks. The pain never extends to testicle or thigh. The loin is thin, and percussion* practised just outside quadratus lumborum and below last rib, after Mr. Jordan Lloyd's plan, evokes the remark "you stab me there." Urine 1025 sp. gr., feebly acid; gives a distinct ring of albumen with nitric acid. Microscopically, a few pus and blood cells, with a quantity of definite oxalate of lime crystals. Amount varies from 36 to

* "I attach great importance to the evidence to be obtained by immediate percussion over the suspected organ, a method of investigation which has not received that amount of attention to which it is entitled. It is best practised from the loin, just beneath the space beneath the tips of the last two ribs, and should be made in a direction upwards, forwards, and slightly inwards. It is best for the patient to stand upright before you. The blow should be sharp and decisive, and of force sufficient to effect a structure several inches below the surface. It may also be practised from the front, at a point midway between the umbilicus and ninth rib. When a calculus is present, the patient will complain of sharp, stabbing pain at the moment of percussion. Other conditions doubtless give rise to percussion pain, but not of the characteristic stabbing of calculus" (*Pract.*, vol. xxxix, p. 178).

46 oz. There is no evidence from his arteries, heart, or his retinal discs, of interstitial shrinking nephritis, which was suggested by the albumen and his age. As the attacks of pain recurred frequently, though somewhat lessened, nephrolithotomy was performed October 8th. On slitting up the lumbar fascia, the perirenal fat bulged through very prominently; being large in amount, it was torn away with the fingers and the lower part of the kidney exposed. A sponge was packed in anteriorly, to keep away the colon. To expose the kidney more thoroughly the wound was now converted into a T, and widely dilated with large retractors. No stone being felt in the kidney itself by palpation, this organ was freed from its surroundings and drawn up into the wound, care being taken to watch the pulse. A calculus (Pl. VII, fig. 1) was then felt as a hard irregular nodular body in the top of the ureter about 1½ inches below the pelvis. The left index being placed below the stone to fix it, the ureter was carefully isolated in the pedicle, scratched through with a steel director and the stone extracted with dressing forceps. The kidney, which was now very movable, was sutured in two places, to the fasciæ and muscles in the edges of the wound by stout chromic gut, and the wound then repeatedly irrigated, wiped out with a solution of Hyd. Perch. (1—3000), and lightly packed with sal alembroth gauze around a drainage-tube passed to the bottom of the wound.

The patient made an excellent recovery. For the first week the bowels were obstinately constipated, and there were occasional pains in both sides, shooting into the groins. Each day lime-oxalate crystals were found in the urine. In the second week the bowels acted regularly with Fredrichshalle water, and the pains and crystals disappeared together. The temperature was about 99° for the first four days when it fell to normal. It remained thus till December 2 when it ran up to 101°. The patient, who had now been getting up for a fortnight, had been chilled and an attack of broncho-pneumonia supervened, and delayed his convalescence. He went out December 11, the wound being all healed save a small granulating patch, level with the skin. There was no sinus. Complete healing followed soon afterwards, and the patient has written since to say that he remains quite well.

This case supports the point brought forward by Mr. Godlee in his paper (vol. xxii of the *Transactions*), that there are three places in the ureter in which calculi are likely to

lodge: (1) near its narrow orifice into the bladder, (2) where the ureter bends and crosses the iliac vessels, and (3) 1½ to 2 inches below the the pelvis of the kidney.

CASE 2. *Symptoms of renal calculus for about eighteen years in a patient æt.* 33 *: large left renal swelling, with stinking, alkaline, purulent urine : nephrolithotomy, August,* 1889 *: nine stones removed (urates, oxalates, and phosphates,* 333 *grs.) : recovery with a persistent fœtid sinus : nephrectomy, August,* 1890*: recovery : one stone was found left behind in the uppermost part of the kidney.*—R. W., æt. 30, was admitted under my colleague Dr. Pitt, July 24, 1889. He had had hæmaturia lasting two days when twelve years old. Since then there have been three attacks of hæmaturia sufficient to colour the urine a bright red. Present illness is dated to ten months ago (September, 1888), beginning with a severe cold, pains in the limbs and shivering. The urine was thick, with a jelly-like sediment. Pain in the left side was now noticed, and lasted for three months; it now and again shifted to the right side. A month ago (June 1889) the urine smelt badly. A week ago he noticed a hard swelling in the left lumbar region. This swelling now extends from tenth rib to within 2 inches of iliac crest, and as far forwards as a vertical line drawn down through the nipple. The muscles are rigid over it, and it is painful on firm pressure. The urine is turbid, alkaline, sp. gr. 1015, loaded with pus; a few hyaline casts; no tubercle bacilli to be detected.

August 10.—I explored the kidney. Usual lumbar incision. On tearing through the perinephritic fat, the kidney was found greatly enlarged. Puncture with a small trocar withdrew foul pus. The colon being packed away with sponges, an incision into the kidney was followed by a gush of the same pus and a good deal of venous oozing. Nine calculi were readily detected and extracted with the finger and forceps. One of these, with an elongated neck and expanded fundus, fitted tightly into the pelvis and top of the ureter. The calculi all stank horribly, were distinctly facetted, and scabrous with a coating of phosphates (Pl. VII, fig. 2, *a*). The wound in the kidney was well syringed out with Lot. Hyd. Per. (1—3000); a large drainage-tube was passed to the bottom of the wound, and the recesses of this were plugged thoroughly with strips of sal alembroth gauze.

The patient made a good recovery from the operation. The other kidney acted well, 4·5 to 5 per cent. of urea being

found in the urine voided naturally, and the temperature remained normal. The wound quickly contracted to a sinus 1¾ inches in depth, but it was necessary to keep a tube in this leading into a bottle, as a large amount of watery, purulent urine continued to come away through the wound. The patient went out December 3, 1889, provided with one of Morris' lumbar urinals. I saw him from time to time during the next six months. He was able to get about sufficiently actively to keep his contract (as a Deptford market gardener) of supplying the Crystal Palace with lettuces, but the flow of urine from the sinus was constant. It again became very foul, and though the urinal caught the greater part of the fluid, sufficient of this escaped to make the flank raw and œdematous, and the india rubber of the urinal became very offensive.

I admitted the patient again August 7, 1890, and performed nephrectomy August 15. The kidney operation presented some difficulties owing to the amount of scar tissue, the large size of the kidney, in spite of the previous drainages, and the abundant oozing. When the kidney was opened freely with the finger to diminish its bulk, much stinking pus escaped. After the removal of this organ a calculus (Pl. VII, fig. 2, *b*) was found in the very top of the kidney, similar in consistence to the other stones, and, like them, horribly offensive. The patient made an excellent recovery, delayed only by an attack of erysipelas five weeks after the operation, and went out October 25.

Case 3. *Calculous pyelitis in a patient with a strongly tubercular history: nephrolithotomy: removal of eight calculi: kidney found much disorganised: complete recovery.*—I was asked to see this patient at Brigg, in Lincolnshire, by Dr. Todd, October, 1889. I found an extremely delicate woman, æt. 29, with a large tender swelling in the right loin, which had been recognised for three months. The urine was loaded with pus, but no history of gravel could be obtained. The temperature was constantly 99° in the morning and 100° in the evening. She had for some years been the subject of a winter cough, and was now suffering from bronchitis. Her nails were markedly clubbed, and she was losing flesh. Her family history justified a very strong suspicion that the origin of her kidney trouble was probably tubercular. Thus, her father had died, aged thirty-six, of phthisis; her grandfather had also died young of the same disease, and so had two aunts

and two of her brothers, one but three months previous to my visit. In the right loin was a large, tender, indistinctly fluctuating swelling. I considered the case a clear one of tubercular pyelitis, and advised early exploration with a view to drainage and subsequent removal of the kidney.

I operated November 16, 1889. The operation presented nothing noteworthy. The kidney was matted to its capsule, and this to the surrounding parts. The insertion of a hydrocele trocar gave vent to pus. On incising the kidney the finger at once came down on multiple stones (Pl. VII, fig. 3). The cortex was so thin, and the whole kidney so damaged by the suppuration, the presence of the stones, and the needful manipulations for their removal, that I advised the friends to be prepared for a later nephrectomy. I was again wrong. The wound healed slowly but steadily, without the formation of any prolonged sinus. By February, 1890, the wound was quite sound, and the patient has remained entirely well since. The entire credit of the after-treatment is due to Dr. Todd.

It will be very interesting to follow the after-history of this case. In spite of the presence of calculi and the complete healing, it is difficult not to suspect that tubercular mischief was co-existent here. I much regret that I did not clear up this point by submitting some of the pus to a bacteriologist and to the test of inoculation. I would point out that bacteriology promises to be of the greatest service to the surgeon in these doubtful cases, where bacilli cannot be found in the pus, and where their presence is suspected. The difficulty of diagnosis of tubercular pyelitis is well known. I would submit that in future these cases may be cleared up by inoculation. No time will be lost, as about three weeks are required for the experiment, and during this time a tubercular kidney may be drained, and thus by the diminution of size, &c., rendered favourable for nephrectomy. I append brief notes of two cases of urinary tuberculosis, which have been lately cleared up for me by my colleague, Dr. Washbourn.

Case A.—M. A. P., æt. 32, was sent to me for obstinate cystitis by Dr. Forty, of Wooton-under-Edge, December, 1889. For a year and a half micturition has been getting increasingly painful and frequent. She now passes urine from one to six times every hour. There is a large deposit of pus in the urine. No tubercle bacilli could be found. The patient had pleurisy five months ago. One sister is "consumptive."

After dilatation of the urethra, examination of the bladder was negative, save that the mucous membrane felt thickened and pulpy. Immediate and very marked relief followed on the swabbing out of the bladder with silver nitrate (ʒij to ℥j). This relief was, however, temporary, and in April, 1890, a repetition of the treatment was asked for. On this occasion the cystoscope showed a pulpy mucous membrane, everywhere either deep red or livid purple in tint; numerous tags of necrotic mucous membrane could be seen floating up off the region of the trigone, to which they were attached, but the fluid was so murky with the pus which constantly streamed up and diffused itself throughout each "washing" used, that I could not satisfy myself whether these tags were connected with the edges of tubercular ulcers. Dr. Washbourn, Demonstrator of Bacteriology at Guy's, cleared up the case by injecting, at my request, some of the pus beneath the skin of a guinea-pig. In three weeks' time one of the inguinal glands became enlarged. This was found post mortem to be full of caseating material. Cover-glass preparations made from this revealed the presence of tubercle bacilli. Dr. Forty tells me that the general condition of the patient is greatly improved, but that the vesical irritability has again returned.

Case B.—In August, 1889, I removed by lateral lithotomy a stone weighing 300 grains from D. M., æt. 10. The case did well, all the urine being passed naturally within three weeks of the operation. A little later urine again came through the wound, and in October, on my return from my holiday, I found the wound occupied with ill-looking flabby granulations, and the inguinal glands on both sides enlarged, pus having formed in the left groin. These and the lithotomy wound were thoroughly scraped out, and some of the material was sent to Dr. Washbourn, who could find no tubercle bacilli. A minute portion was placed in the anterior chamber of a rabbit's eye. Three weeks later a tubercle could be seen at the site of inoculation and two in the iris. A little later a post-mortem examination showed the presence of bacilli in these. The boy went home with two small superficial sinuses. Dr. Harries, of Aberystwith, tells me that these sinuses closed completely soon after the boy's return, and that he remains quite well.

This case and the next two show how difficult it is to remove calculi, especially small ones, from calyces in the upper part of the kidney.

Case 4. *Patient, æt.* 18 : *symptoms of about a year's duration : nephrolithotomy : a small* (*gr.* 22) *oxalate calculus found with much difficulty in a calyx : recovery.*—E. S., æt. 18, was sent to me in May, 1890, by Dr. Cressy of Wallington. The first symptom of stone was blood in the urine, noticed about a year ago. Since this he has had hæmaturia repeatedly after any form of exercise, especially lawn-tennis, riding, cricket, running to catch a train. When exercise has not been followed by hæmaturia it has always brought on pain in the region of the left kidney. He localises this to a spot just under the last rib, outside the erector spinæ. Percussion here and palpation also found a tender spot here about the size of half-a-crown. The pain occasionally follows the course of the ureter, and runs into the left testicle. This has not been tender or enlarged. Occasionally there has been pain all day in the penis. No irritability of the bladder. Can hold his water for three or four hours, and is seldom disturbed at night. The urine never smarts. He has not passed clots. He gives no history of attacks of colic, and has never been sick with the pain. His mother died of phthisis, æt. 29.

The urine is 1018 sp. gr., shows blood-cells and oxalate of lime crystals in abundance. Is otherwise healthy in every respect.

Patient, who is a clerk in the Bank of England, has lived in Surrey all his life. No evidence of any tubercular trouble to be detected.

As treatment had no effect on the hæmaturia or pain, I performed nephrolithotomy in July. The operation presented nothing worthy of note in its earlier stages. When the kidney was explored no stone could be felt in the pelvis, nor anywhere on either surface. An attempt was made to open the calyces systematically by numerous needle punctures, but no stone was struck. I accordingly opened the kidney freely in the middle of its free external border, plugged this opening with my finger for a few minutes, compressing the kidney round it with two fingers of the other hand, and then introduced a child's sound with a large beak and a very short curve. Still I was unable to hit the stone which I felt certain was there. I accordingly dilated the incision in the kidney with my finger and endeavoured to open up and explore with it all the calyces I could reach. I should add that the kidney was healthy and entirely free from any dilatation. Still failing to detect the stone I again introduced the sound, and endeavoured to explore the calyces methodically. I was

on the point of abandoning my search as fruitless, with the intention of advising the removal of the kidney later if the pain and hæmaturia occurred, when a faint and very distant click announced the presence of a stone. The sound was so muffled and far away as to suggest its coming up through the table on which the patient was lying. The beak of the sound was now in the uppermost part of the kidney, the only part which I had been unable to bring away to its position under the ribs, into the bottom of the wound and examine satisfactorily with my finger, or needle, or sound. With some little difficulty the stone (Pl. VII, fig. 4) was extracted by a finger passed along the sound and aided by a dressing forceps. The gaping wound in the kidney was irrigated with a solution of Hyd. perch. (1 in 3000) and then thoroughly plugged with long strips of sal-alembroth gauze, firmly introduced while an assistant steadied the kidney by pressure from the front. When I have had to open the kidney freely to find a calculus, and especially when the organ has been much handled, dilated, &c., and the operation has been at all prolonged, I always adopt this method of plugging. I believe it to be the only means of certainly preventing the hæmorrhage which is otherwise so likely to occur from a vascular organ like the kidney, when the patient has got over the effects of the operation and his pulse has recovered itself

The plugs can be very quickly removed next day with the aid of nitrous oxide, or other anæsthetic, though on several occasions I have dispensed with this. The plugging, to be effectual, must be deliberately done. Otherwise, and if it need repetition, the results from the hæmorrhage and cellulitis, &c., are likely to be disastrous. Thus that excellent surgeon, Mr. Bennet May, has recorded one such case of retro-peritoneal cellulitis and suppuration which ended fatally; it is possible that other operators have not been so candid. Closing the kidney wound with catgut and so arresting the hæmorrhage I look upon as a step which must be fraught with peril. We can never rely on the ureter being pervious for the first two or three days. It must often be blocked with clot, a matter of no moment as long as the urine is able to escape freely from the kidney and the wound. But if the wound in the kidney be sutured and the ureter be blocked with clot, the urine being unable to escape must cause much tension of the pelvis. If the urine be not quite sweet, pent up sepsis may now take place under most dangerous circumstances. The patient made a good but somewhat slow recovery. He went

out at the end of August with a small sinus, and about two weeks later placed himself, by my advice, under the care of Dr. Lever at Harrogate. I am indebted to this gentleman for the following, which was the only complication in the after-treatment of the case, and which also bears on the plugging which I have recommended. Dr. Lever wrote to me :—"When I first saw Mr. S. there were some fine threads to be found at the mouth of the sinus, and gentle traction brought out a shread of gauze; in the course of ten days several larger pieces came away after the same fashion, amounting, altogether, to about three strips of gauze, one by four inches. When the last came away he had a slight attack of hæmaturia, but it subsided in six hours and the sinus soon closed."

The Bank of England, with its usual liberality to its staff, granted prolonged leave of absence. The patient availed himself of this to the very utmost, but it so happened that while skating in the bitter weather of this winter he was noticed by one of the cashiers. The next day came a peremptory order that he should return to his work. I saw him last in February in excellent health, and entirely free from any urinary trouble.

Case 5. *Evidence of renal calculus: nephrolithotomy: no stone found: descent of two stones subsequently, one being extracted from the urethra, the other treated by lithotrity.*—M. C., æt. 38, was sent to me July 28th, 1890, by Dr. Morley, R.N. He is a Chatham shipwright, a man of herculean frame, and extremely stout withal. Five years ago he felt a pain in the left side of a gnawing character, and confined to left lumbar region. This lasted for four hours, when he passed a stone, with much vomiting, this continuing for some days after the stone had been passed. The stone was like the stem of a pipe, white, very hard and prickly. The patient was then free from pain for twelve months. The next attack was a very similar one as to pain and vomiting, but was on the *right* side; it lasted five hours, and three days later a similar prickly stone was passed. He was now free from pain for ten or eleven months, when pain again returned, but this time on the *left* side again. For two or three days the urine was now dark and smoky, but no clots were passed. Then came a period of freedom from attacks for twelve months. But while now and at other times free from pain, the patient frequently had scalding pain in micturition, and generally found sand afterwards deposited. His last two

attacks have been the worst. In 1889 pain came on very frequently, every three or four days, lasting five hours at a time; hæmaturia and "sand" were also noticed for a fortnight.

In August, 1889, the patient went into St. Bartholomew's Hospital at Chatham, and obtained relief from four weeks' treatment by medicine and hot baths. For the next eight months he was free from pain, and noticed no sand or blood. In March, 1890, extreme pain returned in the left loin (the pain, save in 1886, has always been in this side); it lasted three to five hours, and used to recur three or four times a week for a month. The patient then went back to his work, and the pain returned at once, and he has since scarcely been free from a dull aching pain in the loin. This is made worse by exercise, and, when increased, causes "a dragging" on his testicle.

August 3.—I explored the kidney. The ribs being counted, the usual incision was made. The flank being extremely deep, the ilio-costal space small, the muscles largely developed, and coarse fat very abundant superficially under the fascia lumborum and around the kidney, the incision was made five inches long, and converted into a T. The colon was not seen. Sponges pushed in in front protected the peritoneum. The kidney was normal in colour and size, and its capsule unaltered by inflammation. It was carefully palpated, both in front and behind, over its lower two thirds, but owing to the depth of the wound and the rigidity of the ribs I was unable to satisfy myself that I had satisfactorily examined the upper third. I then punctured it repeatedly at close intervals, so as to open every calyx if possible. As no stone was felt, I next made an incision about an inch long over the lower half of the convex border of the kidney, dilated this with my finger, and then introduced a child's sound, and explored the lower calyces. A similar incision made in the upper part, and similarly explored, was equally fruitless. A flexile bullet-probe, passed through one of the above openings down the ureter to its full length, detected no stone. The two incisions were plugged with strips of sal alembroth gauze, and two large drainage-tubes inserted into the wound after this had been dried out and insufflated with iodoform.

The patient rallied well from the operation. The first ten days after the operation he passed water to the extent of twenty, thirty-six, and forty ounces; the large wound healed rapidly, and his recovery was, in every respect, an uneventful

one. He went out September 15th with a small sinus at the junction of the two limbs of the incision. As for the few preceding days he had complained of pain at the end of the penis, I am inclined to think that one of his stones may have been dislodged at the operation, and have already reached the bladder, but I was away, and the patient was not sounded.

The sequel of the case is interesting. The man returned to his full day's work at Chatham Dockyard, and continued it till the middle of October, when he was seized with severe pain in the penis, and three days later a stone passed down to within an inch of the meatus, where it stuck fast, and was removed with forceps. It was about the size and shape of a damson stone. Since then the patient has been troubled with frequent micturition. There has been considerable pain when the bladder is emptied; the stream has sometimes suddenly stopped, and hæmaturia has been occasionally noticed.

November 10.—A stone was felt with the sound.

November 28.—A. C. E. being given, I endeavoured to wash out the stone, which seemed a very small one, by a No. 18 evacuator, after the meatus had been slit. As this failed, a small lithotrite was introduced and the stone crushed. Great care was taken to ensure that the last fragment had been removed, both by listening for any clicking or rattle against the evacuating tube, and by listening above the pubes. The crushed stone weighed 22 grains; it consisted of lithic acid and lithates. The patient went out December 1st.

I have heard, March, 1891, from Dr. Morley that the patient is now in excellent health, and able to follow his occupation regularly.

Case 6. *Symptoms of a year's duration in a patient æt.* 33: *supra-pubic cystotomy performed nine months before in the Pennsylvania Hospital: nephrolithotomy: calculus of uric acid and oxalates, 54 gr., removed from pelvis: recovery.*—W. A. C., æt. 26, was sent to me by Dr. H. P. Berry, of Grantham, October 6, 1890. He had lived in Lincolnshire the first fifteen years of his life, then four in London, and the last seven in America. His occupation is sedentary. He eats meat three times a day, and is "a total abstainer."

About a year ago patient had a severe attack of pain, which a doctor called "renal colic." The pain started in the left loin, and descended via the groin to the left testicle. It was so severe that chloroform was administered for an hour.

When the attack was over a dull pain remained. He has had three severe attacks in all; in all of them chloroform was given. There is always more or less pain in the left lumbar region. No stone has been passed. Ever since the first attack red sand has frequently been present, especially after exercise. There has been no frequency of micturition, and no tenderness of the testicle during the attacks. At the beginning of his illness (October, 1889) the patient was admitted into a hospital in America, where he remained till February, 1890. A medical certificate states that the urine contains phosphates, albumen, and blood, and that there is probably a stone in the left kidney or ureter. At the end of February, 1890, the patient was admitted into the Pennsylvania Hospital. There, his symptoms being thought to point to stone in the bladder, supra-pubic cystotomy was performed without result. On admission patient complains of constant slight pain in the left loin. He cannot walk more than a mile without this pain being much increased, and without bright hæmaturia. His nights are also disturbed by aching in the left loin, which renders it difficult for him to rest in one position. For a year he has been unable to join in any game involving running. The urine is smoky red, neutral, sp. gr. 1015; contains blood; no crystals; many leucocytes.

October 10.—A. C. E. was given, and the ribs being counted, an incision was made immediately below the twelfth. The muscles were extremely rigid and well developed, contracting vigorously under the knife, although reflexes had been long abolished. As soon as the lumbar fascia had been slit and the perirenal fat torn through, the colon distended with flatus bulged most troublesomely into the wound. It was packed out of sight with sponges under the retractor which opened up the anterior angle of the wound. The kidney was placed very high up under the ribs, only to be made out with difficulty. The incision was converted into a T, and when the quadratus lumborum had been nicked, and the ribs well dragged up, the lower end of the kidney was with difficulty drawn up into the wound. A firm, hard body was now felt, partly in the pelvis, and partly in the kidney tissue. A lacerated opening over it being made with the finger, the stone was hooked out by the same means. No other stones were felt, and there were no facets on the stone. Slips of sal-alembroth gauze being introduced into the opening in the kidney and its pelvis, a drainage-tube was passed to the very bottom of the wound. The anterior third

of the wound was closed with salmon-gut sutures, but all the rest plugged with strips of the above-mentioned gauze.

The calculus, which consisted of uric acid and oxalates, weighed 54 gr. Its shape (Pl. VII, fig. 5) is somewhat triangular; at two of the angles are conical processes, one of which probably filled into a calyx, the other into the pelvis. Both are water-worn, as if by the passage of urine. Both surfaces of the stone are studded with myriads of acicular crystals. There was no dilatation of the kidney, and no pus or calcareous débris to be detected. The stone was quite sweet.

October 11.—Has got over the operation well. Temp. 100·2°. A pint of urine, deeply blood-stained, has been passed. A good deal of the usual blood-stained serous discharge has soaked through, necessitating changing the outer dressings at 7 A.M. Has taken cold tea, milk, barley water, and lemonade. 5 P.M., a little ether was given, and the strips of sal-alembroth gauze were removed from the kidney and wound around. Fresh ones lightly replaced.

October 12.—Dressings required changing at dawn and in the evening. Bladder irritable. Complains a great deal of pain in and about the wound. The abdomen moves well, but is a little distended, probably by flatus delayed in a distended colon. Tongue clean. Temp. 102·6°. Pil. Col. et Hyosc. gr. x, and a castor-oil enema to-morrow.

October 16.—After a good deal of difficulty the bowels were well relieved yesterday. The distension of the abdomen has all disappeared. Discomfort has been constantly complained of, much exaggerated in a quiet way. Urine clear after the third day. Wound still dressed twice a day, owing to the free soakage of urine; it is granulating well; the posterior flap of the T gapes and falls back somewhat. Patient is allowed a little chicken or oysters, a few slices of toast or bread and butter; barley water, Oj; lemonade, Oj; weak tea, Oj; soda water, ℥v; port, ℥iv.

October 20.—This morning, early, patient pulled off his dressings, and the wound was left uncovered for some time.

October 21.—Blood having disappeared from the urine for some days, patient last night passed some deeply stained with blood. The posterior flap has fallen excellently into position, and the wound is granulating very healthily. Owing to the exposure of the wound mentioned above, there is now a copious discharge of sour pus, and the urine is foul-smelling and alkaline.

October 28.—In spite of the above-named complication

the abundant granulations have protected the patient, and the wound is now almost healed. The man was moved into a general ward to-day.

November 17.—The patient went out to-day, with a small granulating surface corresponding to the vertical part of the incision. This healed entirely later.

Case 7. *Symptoms of renal calculus for ten years in a patient æt. 25: nephrolithotomy: injury to peritoneum: removal of calculus (from pelvis), oxalates, 48 grs.: complete recovery.*—C. R. D., æt. 25, was sent to me by Dr. Fry and Dr. Clayton Jones, of Shepton Mallet, October 14, 1890, as suffering from renal calculus. Is a Wiltshire labourer, usually drinks "spring water" and milk. His trouble dates to ten years ago when he was admitted into the Cottage Hospital at Shepton Mallet for "inflammation of the kidney." The urine then was smoky with blood. The patient was in bed three months; after that he had occasional pain in the left side and smoky urine for four years. Patient was then laid aside from work for three or four weeks, the urine being again smoky, and there being now a darting pain from the left loin to the left testis. There has never been any pain on the right side. A year later (five years ago) patient had another attack of rheumatism and pain which lasted two months. Since then he has had attacks two or three times a day. One especially bad attack was in May, 1889, and the last about two months ago. There has been a smarting pain at the end of the penis after micturition, and some scalding during the act. Micturition is frequent day and night. The bladder has been sounded without result.

There is a very tender spot just below the last ribs to the outer side of the erector spinæ. There is no enlargement of the kidney. The right side is normal.

Urine acid, sp. gr. 1015; 2 per cent. of urea. No blood. Very slight trace of albumen. Very few leucocytes. No sugar.

October 17.—Nephrolithotomy. Ribs counted, usual incision just below the twelfth. On tearing through the perirenal fat a good deal of difficulty was experienced in localising the kidney. This was due to (1) its being intimately adherent to the colon; (2) to its being very low down, and (3) to its being the seat of a small hydronephrosis, and thus not giving the usual firm, resistent feel. Having operated the week before on a case in which the kidney was unusually high up, and not quickly hitting off the kidney, I sought for it under

the ribs. In so doing I felt a small firm body which was well in reach, but this proved to be not a small kidney but the spleen. Putting an aseptic sponge over the tear in the peritoneum, I again searched for the kidney lower down. On separating it from the colon a stone was at once felt in the pelvis. The kidney cortex was thinned over a collection of urinous fluid amounting to about 2½ ounces, which escaped when, after laceration of the expanded pelvis with the finger, the stone was turned out. No pus. The stone (Pl. VII, fig. 6), a dark green tuberculated oxalate of lime, had no facets. No other calculi to be detected. The opening in the kidney was plugged with strips of sal-alembroth gauze and a large drainage-tube passed to the bottom of the wound.

10 P.M.—Patient has rallied well from the operation and has not been restless. Temp. 100°. He has been sick at intervals since 6 P.M. His aspect is most satisfactory. No anxious or sunken look. The abdomen moves and is quite flat. Owing to his nervousness and complaints of pain he has had Morph. gr. ¼ and ⅙ subacute, and the green-coloured vomiting is very likely due to this. To be fed by nutrient enemata. Only two ounces of barley water to be given by the mouth during the night.

October 18.—Hearing that the vomiting still continued Mr. Jacobson came down this morning prepared to remove the kidney (already the site of hydronephrosis), and if peritonitis was present, to wash out the peritoneal cavity by an incision in the linea semilunaris. Except for the vomiting all signs of peritonitis were absent. The abdomen is somewhat retracted, it moves well, the voice is good, and the extremities are warm. The kidney is acting well, as shown by the amount of urinous soakage into the dressings. While a little ether was given the strips were renewed, and to ensure all the urine escaping safely away from the deep part of the wound where the peritoneum had been injured, the kidney was stitched up into the wound with two sutures of stout catgut. These took up a considerable thickness of kidney tissue, and passed through the cut edges of the muscles but not through the skin. On recovering from the anæsthetic the patient was violently sick, and occasionally attacks of retching recurred persistently at intervals of half an hour for about two hours. He then fell asleep after an injection of morphia, and the sickness and retching practically ceased after this time. Passed 12 oz. of blood-stained urine in the evening. Temperature morning and evening 99°.

October 19.—Sickness has ceased, but owing to the thirty-six hours of nutrient enemata only the pulse is extremely weak and feeble. Temp. 99°. Occasional teaspoonfuls of brandy, champagne, and weak tea to be given. Has passed water twice, 15 oz. in all, smoky.

All went well from this time onwards, save for a mild attack of bronchitis, in large measure due to the constant soakage of urine which kept the patient wet. While the cough lasted it was troublesome from the way in which it opened the wound and drove the kidney up into it.

November 4.—The pads are not soaked after eighteen hours. The wound is filling up with granulations.

November 23.—Patient went out to-day, the granulations being level with the surface of the skin. All the urine comes the natural way.

Case 8. *Patient æt. 40 : symptoms for fifteen years : diagnosis of cystin calculi : nephrolithotomy : four calculi removed weighing 387 grains, three of them consisting of cystin : recovery.*—Miss B., æt. 40, was brought to me December, 1890, by Dr. Lockhart Stephens of Emsworth. Fifteen years ago pain had been noticed in the region of the right kidney, made worse by movement and, while constant, exacerbated at times into suffering that was almost unbearable. These attacks recurred every three or four months, and were attended with excessive sickness. The pain was also much increased during her monthly periods. Blood was first noticed in the urine about five years ago, the hæmaturia then lasting continuously for several weeks. In 1889, after two weeks of pain, a small stone was passed; unfortunately this was not preserved. Again about a year ago blood appeared in the urine, but only lasted a day. At the present time the patient was never a day without pain, this being referred especially to two spots, one, the usual one, just below the last rib and outside the erector spinæ, the other on a level with this, but about 3 inches anteriorly. She was unable to take any exercise owing to the increase in her suffering. Flexing and then straightening the hip at once caused pain. The right kidney was markedly moveable, but not enlarged. The sites of the pain were tender, and both the tenderness and the pain were much increased by the examination.

All her life Miss B. had been troubled by constipation and biliousness. Her parents are both living, aged 68 and 67; neither is gouty, but the mother's fingers are deformed by

chronic rheumatism. There is no history of any urinary trouble in the family. Two sisters and one brother, aged 31, 39, 24, died of consumption, and one, an infant, of meningitis; one of the sisters passed gravel. The above facts are of interest, when Dr. Golding-Bird's words are remembered. "There is sufficient evidence before us to justify our expressing a strong opinion of its essentially scrofulous and remarkably hereditary character." According to Sir W. Roberts more recent observers have not found any reason to associate the occurrence of cystinuria with tubercular or strumous affections. Thus Fabre (De la Cystine, *Thésis de Paris*, 1859) examined the urine in a large number of tubercular patients, and in thirty-six strumous children, without finding a trace of cystine. In fifteen chlorotic women the results were also negative.

In a specimen of urine which was given to me at Miss B.'s visit, hosts of cystin crystals were discovered by my dresser Mr. Lister. These were in the usual form of colourless, transparent, hexagonal plates, the majority being very perfect hexagons; in some the sides and angles were unequal. The lack of colour, the transparency, and the regular shape distinguished these crystals from uric acid, which is sometimes deposited in six-sided plates. The urine from which the above crystals were deposited was faintly acid, sp. gr. 1018, and soon deposited a sediment very like that of pale coloured lithates. It was thought by some that it possessed the peculiar sweet fragrant odour which has been likened to that of sweet briar. I was unable to satisfy myself of this, but there was no doubt that the specimen quickly became putrid, another character of urine containing cystin.

I wrote to Dr. Stephens advising nephrolithotomy, and stating that we should probably find a cystin calculus. This prognosis was, however, made doubtful by the fact that Dr. Stephens, in nine specimens examined, only found cystin, and that scantily, in one. Save for a low specific gravity, 1010—1012, probably due to the increased fluids taken, the urine was healthy.

Treatment gave no relief. The patient was never a day without pain; quite unable to walk, she spent the whole day in lying and sitting about. Her anxious look and chlorotic bloodless aspect were most striking. I performed nephrotomy on January 25, 1891. It was noticed before the operation that the patient's pulse was extremely weak, at times counted with difficulty, and this was attributed to the long-continued

suffering, the inability to take exercise, and disinclination for food. The heart was normal. The operation, happily, was a remarkably easy one. The loin was thin, the fascia lumborum well developed as a landmark, and the stones easily found. A. C. E. mixture was given followed by ether. It was noticed that as the muscles were cut through (as often is the case, they were extremely rigid) very few vessels oozed and only one sprang. The anæsthetist at this time stated that he could not feel the pulse. The head was, therefore, kept very low, injections of brandy given subcutaneously, and the operation completed as soon as possible. The mobility of the kidney facilitated this. The colon, which was distended, being packed away with sponges, the kidney was found, pulled down into the wound, and the largest of the stones at once felt in the dilated pelvis of the kidney. On scratching through this a gush of bloody urine escaped, and the stone was easily turned out with the finger, and the two smaller ones felt and removed. I had only just time to fasten the kidney into the wound with a stout catgut suture, plug the wound thoroughly with strips of sal-alembroth gauze, apply the dressings, and get the patient to bed. Though every precaution had been adopted to meet shock in so weakly a patient, viz. bandaging the extremities, operating on a hot-water bed, &c., Miss B. was extremely collapsed for the first six hours. Sickness and nausea were then extremely troublesome for the three days following the operation, but were explained in part by a monthly period setting in on the third day, six days before it was due. The kidneys, however, acted well, the tongue kept clean, and very small doses of very varied fluids, together with nutrient enemata, were sufficiently retained. The patient went out within the month after the operation. After her journey to Hampshire the wound reopened, and in March Dr. Stephens wrote to say that there was a small sinus secreting about 2 oz. daily of pale watery urine. The patient had gained strength and flesh, and could now take exercise without pain. In April I again heard that the patient's general condition was still further improved, that the sinus had closed, but that the scar was a little tender.

The after history of this case will be very interesting. From the number of stones, and the necessarily hurried operation, I am still doubtful, though the sinus has closed, whether I did not leave one or more calculi behind. Cystin has not again been detected in the urine, but the prognosis must here be extremely guarded. Owing to the great obstinacy,

DESCRIPTION OF PLATE VII.

To illustrate Mr. Jacobson's cases of Nephro-lithotomy.

FIG. 1.—Small hedgehog calculus, oxalates, removed from the top of the ureter October 7, 1889, in a patient æt. 53, sent by Dr. Phillips of Faversham. Recovery.

FIG. 2.—Nine stones, urates, oxalates, and phosphates, 333 gr., removed from a patient of Dr. Newton Pitt, admitted into Guy's with a large left renal swelling, and stinking, purulent urine. Nephro-lithotomy August, 1889. Recovery with a persistent fœtid sinus. Nephrectomy August, 1890. Recovery. The calculus (*b*) was found left behind in the uppermost part of the kidney.

FIG. 3.—Multiple calculi, mainly urates, 39 gr., removed from a patient of Dr. Todd at Brigg, æt. 29. The calculous pyelitis here closely simulated tubercular pyelitis, with the abundant pyuria, very slight hæmaturia, and very strong family history of phthisis. Recovery.

FIG. 4.—Small lime oxalate calculus, 22 gr., found with great difficulty in a calyx high up in the kidney of a youth æt. 18, a patient of Dr. Cressy of Carshalton. The symptoms here had been very severe for a year, viz. hæmaturia and lumbar and testicular pain. Nephro-lithotomy June, 1890. A sinus persisted for three months owing to some shreds of the sal-alembroth gauze which had been used for plugging being left behind. Recovery.

FIG. 5.—Calculus, urates and oxalates, 54 gr., removed from the pelvis of the kidney of a patient æt. 33, sent by Dr. H. P. Berry of Grantham. Nephro-lithotomy Nov., 1890. Kidney situated very high up. Recovery.

FIG. 6.— Calculus, lime-oxalate, 48 gr., removed from the pelvis of the kidney of a patient æt. 25, sent by Drs. Fry and Clayton Jones of Shepton Mallet. Nephro-lithotomy Nov. 1890. The kidney here, which really lay very low down close to iliac crest, was sought for higher up, and the peritoneum wounded. This opening was plugged with gauze frequently renewed, and the kidney sutured well up into the wound. Uninterrupted recovery.

FIG. 7.—Four calculi, *a*, *b*, *c*, pure cystine, *d*, urates and phosphates, 387 gr., removed from the dilated pelvis of the kidney of a patient, æt. 40, of Dr. L. Stephens of Emsworth. A cystine calculus had here been diagnosed from an abundant portion of cystine found once in the urine. Severe symptoms of renal calculus had been present for fifteen years. A sinus persisted for two and a half months and then closed. Recovery.

Fig. 1

Fig. 2

Fig. 5

Fig. 3

Fig. 4

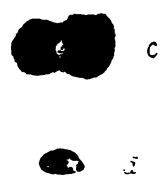


Fig. 7

Fig. 6

U of M

Danielsson & Co. Lith.

usually, of cystinuria, the chief indications would appear to be maintenance of the general health at a good average standard, attention to the diet and digestive organs, and regular action of the bowels.

Three of the calculi (Pl. VII, fig. 7 *a*, *b*, *c*) presented all the characters of pure cystin stones, viz. a honey-yellow colour, a surface mammillated and lustrous with minute crystals. The comparatively small weight of the stones, one of which measured $1\frac{3}{4}$ inches long, is also characteristic. The fourth calculus contained no cystin, but oxalates and urates.

The following points seem worthy of especial attention:

1. The great difficulty which exists in diagnosing between tubercular and other forms of pyelitis, and the help which bacteriology and inoculation promises to give in these cases.

2. The occasional impossibility of removing small stones if embedded in the substance of the top of the kidney.

3. Injury to the peritoneum during a nephrolithotomy will be harmless if the wound be kept aseptic, and the kidney sutured well up to ensure good drainage.

4. The cystin stones are, I believe, the first that have been removed by nephrolithotomy from the kidney.

XXXI.—*A case of Nephrolithotomy in a boy aged ten years.* By Bilton Pollard. *Read April* 10, 1891.

CONSIDERING the frequency with which calculi are met with in the bladder in childhood, it is reasonable to suppose that they must also frequently occur in the kidney. And, indeed, it is not such a rare event to find one or more stones in the kidneys of children who have died from other diseases. But whilst nephrolithotomy is now quite a common operation in adults, it appears, so far as I can learn, to have been but rarely performed in childhood. I have made inquiries at several of the children's hospitals. Dr. Voelcker has kindly looked through the operation book at the Great Ormond Street Hospital, and he finds no record of a case there. Mr. Clutton has no recollection of a case at the Victoria Hospital. Mr. Stanley Boyd tells me that there has not been a case of nephrolithotomy at the Paddington Green Hospital. Mr. Wright, of the Pendlebury Children's Hospital, Manchester, writes that during the ten and a half years during which he has been attached to that hospital, there has been no case of nephrolithotomy, and no undoubted case of calculus, though there have been suspicious ones at times. On the other hand, he says that in two of his cases in which the operation was performed in adult life, there was clear evidence of the presence of the calculus since the ages of seven and eleven years respectively. In other recorded cases, in which nephrolithotomy had been performed in adult life, I find that one or other of the symptoms, then evidently dependent on the presence of the stone, had been noticed since childhood. Mr. Hastings, the Resident Medical Officer at the East London Hospital for Children, tells me that there have been two successful cases of nephrolithotomy there. They were both under the care of Mr. Parker.

The explanation of the infrequency with which nephrolithotomy has been called for in children may be that the stones are usually passed down the ureter into the bladder, whilst they are still small, and that if the stones do not pass from the kidney, their presence in that organ in childhood

does not give rise to sufficiently characteristic symptoms for a diagnosis to be made.

It is with a view of ascertaining the experience of others in regard to renal calculus in childhood that this case is brought forward.

My patient was a boy æt. 10. He was admitted to the North-Eastern Hospital for Children in December of last year. He had been subject to attacks of abdominal pain, associated with hæmaturia, during the past three years. These attacks had varied in frequency, but the intervals had usually been about three weeks. The boy was in the hospital under Dr. Pasteur's care for three weeks in April, 1889. During that time he complained of a dull pain in his right loin, but although he got up every day, he had no attack of colic. His urine was always acid; it always contained a little albumen, and often some blood, but never much blood. The boy was readmitted in September, 1890. He was in the hospital a month, and during his stay he had four attacks of pain simulating renal colic on the right side. The pain was usually referred to the umbilicus, but sometimes it shot down towards the inner side of the right thigh. The urine always contained albumen, often a little blood, and sometimes a deposit of oxalate of calcium and urates, but never any pus. I examined the boy, and found that though not appreciably enlarged, the right kidney could be felt, whilst the left could not. There was no tenderness on pressure.

Two months later the boy's mother brought two specimens of urine, which were almost porter-coloured. She stated that it was very difficult to get a sample of her boy's urine, as he always tried to pass it out of doors or to throw it away, and from this she concluded that it frequently contained blood. The boy was anxious to escape operation, and so ceased to complain of pain, and tried to prevent his mother seeing his urine.

The only symptoms on which a diagnosis could be made were attacks of pain, which appeared to have some relation to the right kidney, and renal hæmaturia, which was sometimes profuse. The absence of pus from the urine, and the general condition of the boy, which was fairly good, although he was anæmic, appeared to exclude renal tubercle, and the absence of a renal tumour, after the symptoms had been present for three years, seemed equally to exclude new growth.

It was decided to explore the right kidney for stone. This was done on December 20, 1890, through an incision

extending from the tip of the last rib transversely backwards to the erector spinæ muscle. A hard substance was readily felt in the pelvis of the kidney by the finger, and a needle passed through the cortex of the kidney also struck the stone. The kidney was incised close to the outer border on the posterior surface and then torn open with a pair of dressing forceps sufficiently to admit a finger. The stone was easily extracted by means of polypus forceps. There was no pus in the pelvis of the kidney and it did not appear to be dilated. There was rather free bleeding from the renal substance; the bleeding could be checked by digital pressure, but no vessel could be picked up. A tube was passed through the wound in the kidney and strips of gauze were tightly packed in around the tube. There was no further trouble with bleeding. The stone after drying weighed 27 grains. The highest temperature was 100·6° F. on the day of the operation; it had fallen to the normal by the fourth day. The urine passed per urethram after the operation contained no blood. There was a free discharge of urine from the wound. The strips of gauze, which were packed into the wound in the kidney, in order to check the bleeding, were removed on the day after the operation, and the tube was removed from the kidney on the second day.

After the first two or three days the boy was free from pain. Urine continued to escape freely from the wound, and on the fourteenth day the kidney was explored with the finger, as it was thought that the continued discharge of urine from the wound might be due to the pelvis of the kidney being plugged with blood-clot. No clot was found. A small rubber tube with tapering end was then passed through the wound in the kidney in the direction of the ureter, and some lotion was syringed through it with the object of dislodging a clot, if there was one impacted in the ureter. The urine passed after this operation contained two small clots and a little blood, but no decolourised clot was detected. The amount of urine which escaped from the wound now diminished quickly and ceased entirely after the fifth day. The perinephritic wound did not heal, and on the fourteenth day the cause of this was found to be some wool, which had been used as a sponge, having been left in the wound. After removing the wool the kidney was examined with the finger and the incision into it was found to be healed. The perinephritic wound had healed ten days later, *i. e.* rather more than five weeks after the nephrolithotomy. It is now (February 28) ten weeks since

the calculus was removed, and the boy remains quite well. He has had no more hæmaturia and no attacks of abdominal pain.

My chief object in bringing this case forwards is, if possible, to learn the experience of others in regard to renal calculus in children. There are, however, some points of interest in connection with the clinical history of the case and with the operation.

1. Renal hæmaturia of three years' duration was almost the only characteristic symptom in the case. There had been attacks of severe pain, but this had been referred to the region of the umbilicus rather than to the loin and thence towards the groin. The urine contained no pus, although the stone was found to be freely moveable. In the absence of pyelitis there was a resemblance to cases of vesical calculus in children, in whom the urine is often fairly healthy after the symptoms of stone in the bladder have been present for some time. Mr. G. A. Wright (*Med. Chronicle,* vol. v, p. 458), referring to the difficulty in diagnosing calculus in an otherwise healthy kidney, says:—"Renal hæmaturia is the only single symptom of anything like cardinal importance." The case now recorded gives support to this opinion.

2. On cutting into the kidney there was rather free bleeding, which did not cease, as it usually does, after pressure had been maintained for a few minutes. It was, however, completely controlled by plugging the wound in the kidney for twenty-four hours.

3. Urine flowed freely from the wound for fourteen days. The pelvis of the kidney was then explored with the finger in search of a clot and some lotion was syringed down the ureter. As the discharge of urine from the wound ceased entirely in five days after this treatment it seems probable that the ureter had been plugged by a clot, which the syringing succeeded in dislodging.

XXXII.—*A case of Gastro-jejunostomy for Obstruction of Pylorus due to malignant disease.* By Walter Henry Brown. *Read April* 24, 1891.

HISTORY.—Patient, a woman, æt. 56, had enjoyed good health up to twelve months prior to the operation. The family history did not present any feature of importance. She had borne twelve children, seven of whom are at present living. One year ago she began to suffer from symptoms of dyspepsia, the most prominent being severe pain after food. She lost flesh rapidly, vomited at intervals, but not in any quantity. The pain grew so severe that her medical attendants were compelled to use narcotics in order to keep her in anything like comfort.

Condition immediately before operation.—I found her in very great distress, being constantly in severe pain, much wasted, pulse feeble, tongue brown and dry. The pain was rendered more acute after swallowing a teaspoonful of water, and in a few minutes she vomited the water mingled with dark brown mucus. The abdomen was distended and tympanitic above the level of the umbilicus, below this point there was less distension. To the right of the umbilicus on deep pressure I found a hard fixed swelling, sausage-shaped, about the size of a hen's egg, and further away to the right were two smaller nodules, the outline of the distended stomach was readily made out, and on palpation powerful contractions could be induced, these contractions causing much suffering. Flatus was passed at times, and a very small quantity of fæcal material had been voided on the day I saw her. As her surroundings were not good I suggested her removal to the infirmary with a view to operation, and this was done the next day.

On admission vomiting became continuous, and for the first time large quantities of dark brown fluid were thrown up. As she was rapidly losing ground I decided, after consultation, to operate, and proceeded to do so in the following manner:

Operation.—The stomach was first washed out with a weak solution of boracic acid until the washings were quite clear, then the patient was put under ether. The abdomen was opened by a median incision, reaching from one inch below

the xiphoid cartilage to the upper margin of the umbilicus. The vessels in the line of the incision were dealt with in the usual manner.

The anterior wall of the stomach presented itself. This was pushed back and the hand passed into the abdominal cavity. I found the small intestine collapsed and lying at the back of the cavity. Occupying the position of the pylorus and first part of the duodenum was the large fixed swelling before mentioned, and in addition to this several nodules were scattered on the posterior surface of the abdomen. There were also several enlarged glands in the mesentery.

As anything like extirpation of the disease seemed impossible, I traced the empty small intestine upwards until the fixed portion of the duodenum was reached, then a loop about ten inches in length was drawn out of the wound and gently squeezed to empty as much as possible both the bowel and its blood vessels. A piece of soft rubber drainage-tube was passed two or three times round this and held in position by means of a clip. The anterior wall of the stomach was then drawn into the wound, the cavity of which was packed with sponge. A vertical incision was made into the stomach, three quarters of an inch in length. A little boracic water escaped. One of Senn's decalcified bone plates was passed through the opening and fixed in position with four silk sutures. The intestine was opened in like manner and another bone plate introduced and fixed. Then the stomach and intestines were brought together and these eight ligatures tied and cut short. In order more firmly to fix the viscera in their new position twelve fine silk sutures were passed at short intervals through the peritoneal surfaces of stomach and intestine round the entire border of the bone plates. This was easily done, as the length of the loop of small intestine drawn out enabled the parts to be brought fully into view. After the usual peritoneal toilet, the drainage-tube was removed from around the intestine, and the parts dropped back into the cavity. The wound was closed in the usual manner and dressed with dry dressings.

Subsequent history.—After the operation the general condition of the patient was practically unchanged. An hour later she vomited about 10 oz. of coffee-coloured fluid. This vomiting was renewed at intervals during the next two days. Upon one occasion the fluid was very offensive. The pain diminished, and in the fourth day had entirely disappeared. The temperature rose to 101°, this being due to an attack

of parotitis which soon subsided. The patient suffered much discomfort from thirst; large enemata of warm water failed to relieve this symptom. On the second day of the operation she was allowed small quantities of liquid by the mouth. This quantity was daily increased, and on the twentieth day a little solid food was allowed, and as this gave rise to no discomfort, it was continued. She gained strength, the bowels acted well, and three weeks after the operation she returned home. The abdominal incision healed by first intention.

Some weeks later I saw her at home. She was taking food fairly well, could sit up some hours daily, and was being taken out in a bath chair. There had been no return of pain.

Remarks.—I will offer for your consideration a few points which have occurred to me.

Firstly: First as to justification for interference in such cases, where the best that can be hoped for is a prolongation of life, and not a cure in any sense of the word. The objection which has been taken under this head applies equally to all operative interference for malignant disease, and yet every one can relate cases of, say cancer of the rectum, where colotomy has been the means of relieving the sufferer and prolonging life, and is thus held to be not only justifiable but necessary; and the procedure I have just described has the same aim and almost precisely the same claim on physical grounds, for in both the irritation caused by the passage of partly digested food on the one hand and fully formed fæcal matter is removed, if not wholly, to a very great extent, and in both the distress caused by obstruction is relieved.

Secondly: The operation itself. Whilst in the hands of the inventor the decalcified plates may be securely fixed by means of the four ligatures he directs, I am sure that to those who, like myself, have not his rich experimental manipulation, disaster will occur if these sutures be not supplemented by others placed outside the limit of the bone plates; and this, not easy if a small loop of intestine be taken, is by no means difficult when a length of bowel is drawn out of the wound, enabling the point of junction with the stomach to be turned completely over. The direction of the incision I selected, namely, vertical, does away in great measure with the danger of "kinking." This accident has proved fatal in more than one case.

Thirdly: As to feeding the patient after operation. Cases

of malignant disease of the pylorus are obviously in bad condition and their vital powers at a low ebb, yet the rule has been to withhold all food by the mouth for some days, thus making additional call upon the limited reserve strength, and adding to the discomfort, I ought, perhaps, to say suffering, of the patient.

In my own case the thirst was extreme, she suffered more from this than from the wound or her disease. I gave her small quantities often repeated; she soon became comfortable and slept, and why not?

If the junction has been well made, it ought to stand the test of holding water within a very few hours of operation; nay, more, it ought to be water-tight before it is returned to the cavity, for if the teaching of physiology is worth anything, the mere fact of introducing a foreign body into the stomach at once excites the flow of gastric juice, and surely when we insert a foreign body of such a size, and closely applied to the stomach wall, there must of necessity be digestive fluids passing over the newly-made opening within a few minutes, and the same argument applies to the intestinal side of the junction. Acting, then, on this idea I did not withhold fluids, but gave them in sufficient quantities to prevent thirst.

The after-history of the case is briefly as follows:—The patient died four months from the date of operation, and during this time, until within a day or two of her death, there was no return of pain. I much regret that I was unable to obtain and preserve the parts involved in the operation. The points to which I have invited your attention will, I trust, be found in accord with the opinion of those whose experience is greater than mine.

XXXIII.—*Two cases of Resection of Intestine by Senn's method.* By W. Arbuthnot Lane, M.S. *Read May* 8, 1891.

E. C., a woman æt. 53, was admitted into Guy's Hospital on December 31, 1891, with the following history: As far as could be gathered it seemed that she had been sick for five days, and on the morning of the day on which she was admitted the material vomited had become fæcal in odour. She first observed the hernial tumour on the day before her admission, though before that date she had for several days felt pain in its position. The bowels did not appear to have been completely confined during the period of her illness, but whether the small quantity of material which came away was only the contents of the larger bowel, or whether some of the contents of the small bowel had passed through the segment, a portion of whose calibre was found to be constricted, is doubtful. Subsequent examination of the strangulated bowel rendered this last hypothesis highly improbable.

While in the ward for the short period preceding the operation, she vomited small quantities of foul smelling material. Her abdomen was but slightly distended, and she had on the right side what appeared to be a very small femoral hernia. She was much prostrated and enfeebled. The patient being anæsthetised, the hernial sac was exposed and opened. It was thickened and inflamed, but apparently of recent formation. The contents of the sac were very foul, and of a pultaceous character. A small, soft, flaccid nodule of gut was exposed. Judging from the appearance of the hernia and of the contents of the sac that the gut had either perforated or was in all probability in an irrecoverable condition, I determined to explore it further. After dividing the stricture and carefully removing the foul contents of the sac, I opened the abdomen in the median line from the umbilicus downwards, and drew the damaged loop out of the abdomen through this incision. It then became apparent that only a portion of the circumference of the gut had been involved, and, though there was no obvious perforation, the wall of the bowel was so

very thin, and a portion of it was so much inflamed, that it was evidently impossible for it to recover. The constriction was situated about ten inches from the ileo-cæcal valve. About three inches of the bowel were removed, and the ends of the gut were closed by continuous silk sutures, the mesentery corresponding to the excised portion being ligatured. An incision was made into the convexity of each portion of bowel about three inches from its closed extremity, and into each a decalcified bone plate was introduced. Some difficulty was experienced in getting the plate into the distal segment of the bowel owing to its very contracted condition. After tying the four pairs of silk ligatures, I felt some doubt as to the perfect safety of the proceeding, so I introduced a continuous Lembert's suture along the greater part of the circumference of the plates. Around this a graft of omentum was carefully sutured in position; in fact, except for the Lembert's sutures, the method suggested by Senn was followed out closely. For some days after the operation the patient was fed with nutrient enemata, and then with peptonised milk by the mouth. Some opium was given to keep the parts at rest for a time, and to restrain a slight tendency to diarrhœa. She was soon able to eat oysters, and on January 11 she had fish for her dinner. During this period she did not suffer from sickness, except on a single occasion when a bandage was applied somewhat too tightly around the abdomen. Her abdomen was soft, and her motions were relaxed and fairly regular. She left the hospital three weeks and four days after the operation, but returned in four days with a small tumour beneath the upper segment of the left rectus muscle. This proved to be a small abscess, the contents of which, though sweet on the first day, soon became sour-smelling. With this exception she progressed favorably.

A. B., æt. 55, was admitted into Guy's Hospital on February 22. She had been vomiting for five days, the material ejected having for two or three days been of a very foul odour. She was much collapsed and did not seem strong enough to survive any but a short operation. She had a femoral hernia on the right side. On exposing this the sac was found to be acutely inflamed and to contain pus and fæces, and a small loop of bowel which was perforated. The bowel being ligatured and carefully cleansed, a median incision was made between the umbilicus and symphysis, and through this the loop of damaged intestine was drawn. With as

little delay as possible the damaged loop was removed. Both the distal and proximal ends of bowel were closed. A Senn's plate was introduced into the distal loop, which was much contracted, and the sutures arranged. On introducing a plate into the proximal piece of gut, it was found that this portion of the bowel was so soft and rotton that the ligatures tore out frequently. As the patient was becoming rapidly moribund it appeared useless to attempt to remove more bowel in the hopes of getting better material higher up, as this would have entailed considerable delay, so I determined to do the best I could under the circumstances. On tying the ligatures and forcibly approximating the plate the proximal bowel presented another tear, which was closed with the greatest difficulty and but imperfectly. A piece of omentum was attached as soon as possible, and the wound in the abdominal wall was closed. The patient appeared at this stage to be almost dead, but with the help of brandy administered subcutaneously in large doses, and other means, she was dragged through the night, and in the morning she was living to my great surprise. She was fed with enemata solely at first, and later with peptonized milk by the mouth. She became very bad somewhat suddenly on the end of the fifth day and died two hours afterwards, having survived the operation five days and two hours. As we feared, the proximal bowel presented a gangrenous patch through which the contents of the bowels had escaped, and caused her death in about two hours.

Only one of the Senn's plates was found and it was reduced to a thin ring. From the appearance presented by the proximal intestine it seemed extremely likely that if I had in the first instance removed a longer portion of it I should have saved my patient's life; but, as I have already said, if I had attempted to do so after I had found the condition of the gut so unsatisfactory, I am sure the delay entailed by the necessary additional procedure would have resulted in her death upon the table.

I would now make the following suggestions:

1st. That when the strangulated loop of bowel is gangrenous or obviously ulcerated, the abdomen be opened in the middle line, and a continuity be established between the distended proximal gut and the empty distal portion. The most rapid and effectual means of establishing this anastomosis of which I am aware is by the use of Senn's approximation plates.

Whether the strangulated loop be resected or not must

depend in each case upon the amount of adhesions present and on the condition of the patient. The removal of the injured bowel is of very secondary importance to the establishment of a through passage for the fæces. If the loop be not removed it may be incised or not as may appear necessary in each case.

If time permit the distended proximal bowel should be emptied of much of its contents before connecting it with the distal portion. To treat such cases in the present day by the older methods seems to me to be a proceeding which is little short of being barbarous.

2ndly. I would point out the remarkable applicability of Senn's method of establishing continuity with or without resection to such cases of strangulated hernia as are now allowed to die from obstruction, the strangulated loop which is neither gangrenous nor perforated never recovering itself sufficiently or soon enough after the operation to allow of the passage of fæces through it. As we are well aware such cases form a very large proportion of the fatal results of operations on strangulated hernia, and I would maintain that the present mortality after herniotomy, which in some institutions is said to amount to 50 per cent., reflects no credit upon the surgery of the present day.

From the appearance of the strangulated bowel we are able, in a large proportion of cases, to form a very good opinion as to whether the patient will die of obstruction or not.

I would therefore urge very strongly that if the condition of the strangulated knuckle be such as to arouse anxiety, the abdomen be opened at once in the middle line, the loop be thoroughly examined, and if it seem improbable or doubtful that it will recover sufficiently from the compression to allow of the passage of the intestinal contents through it without delay, intestinal anastomosis must be established, and if the condition of the loop demand it, resection should be performed also.

When intestinal anastomosis with or without resection is performed, it is well to bear in mind, as illustrated by my second case as well as by one's knowledge of the conditions in cases of obstruction, that the portion of distended bowel immediately above the stricture possesses less vitality than the part that is more distant from it, and that in cases of obstruction of some standing it would be well to remove it also, or not to utilise it for short circuiting. Senn's method of performing intestinal anastomosis and resection of bowel

can, with a little practice, be performed with great rapidity, and appears to be wonderfully free from the risks that accompanied the older methods. I think that the present terrible mortality following herniotomy can only be met by the adoption of more efficient and complete operative procedures than are at present in use, and that the sooner we shake off much of what is euphoniously called our surgical instinct the better it will be for our patients.

XXXIV.—*Two Cases in which a sequestrum was removed from the neck of the femur without injury to the hip-joints: recovery in both, and in one with a perfect joint.* By Charters J. Symonds, M.S. *Read May* 8, 1891.

BEATRICE S., æt. 2 years and 3 months, was sent to see me by Mr. J. B. Trapp, of Hackney. The child could run about quite freely and without pain, but with just a perceptible limp. There was a large chronic abscess occupying the front and outer aspects of the thigh, extending 5 inches down from the anterior superior spine. All the movements of the hip-joint were present, and were complete except flexion and extension, and these were only slightly limited, and this check seemed explained by the size and position of the abscess. A more careful examination showed that there was some enlargement of the anterior border of the great trochanter, as from a deposit of new bone, and suggesting the existence of necrosis of the femur. I wrote to Mr. Trapp that I thought the case one of necrosis of the neck of the femur, and offered to admit the child to the Evelina Hospital and operate. I had long been on the watch for a case of this kind, where a tubercular sequestrum exists in the neck, and the pus passes forwards and outwards leaving the joint free. On November 26, 1887, I laid open the long abscess, 4 × 2 inches from end to end and scraped it. Then after some searching I found a minute sinus at the upper end, leading to dead bone in the neck of the femur. The sinus passed just internal to the anterior intertrochanteric line, and around it there was a little new bone. The opening was carefully enlarged outwards with a gouge, and then the capsule could be seen bounding the track in front, and raised up from the neck of the bone. After a little trouble a loose piece of yellow bone—a typical caseous sequestrum—was removed. The epiphysial cartilage was felt, and the cavity appeared to occupy the entire diameter of the neck. The capsule which was seen in front was accidentally pricked, when a little clear fluid escaped. The wound was stuffed with gauze, and a double splint applied.

The sequestrum represented a portion of the anterior

surface of the neck and of the ephiphysial surface. It measured $\frac{5}{8}$ of an inch along the epiphysial junction, nearly the same along its upper border, and $\frac{5}{16}$ of an inch from before backwards, *i. e.* in thickness, so that a fair sized piece of the epiphysial surface of the shaft was removed.

The progress of the case was very slow indeed. The child's health was feeble, and the daily dressing of so large a wound in so young a child caused much distress.

The child remained in the hospital for nearly a year, but the surface wound was not healed for quite a year and a half. After this she began to walk and has remained well up to the present time. Her condition when shown to the Society April 24, 1891, three and a half years after the operation, was as follows :—The leg was $1\frac{1}{8}$ inch shorter than the sound limb, the great trochanter being nearly on a level with the anterior superior spine. The limb was rotated outwards, and could only be moved inwards a few degrees. Flexion and extension were permitted through a few degrees, and so were abduction and adduction. The range of movement had increased decidedly during the last six months. The child could walk without pain, and could run about freely. The shortening in this case is due, no doubt, to the large amount of the neck destroyed by the disease, the epiphysial cartilage being involved, so that all prospect of further growth was destroyed at the time the operation was performed. The fixation I would suggest to be due to two causes. First to the method of operating, by stuffing and drainage, involving prolonged treatment and much suppuration, and second to the long retention of the joint in one position, involving shrinkage of ligaments. There was at no part of the course of the case any evidence by pain or otherwise that the joint was inflamed. As distinct improvement has taken place in movement during the last few months, there seems to be a prospect that the child will acquire still further articular mobility. I am not disposed to employ forcible means with a view of increasing the movement, for reasons that are obvious.

Alfred Davey, æt. 5, walked into the out-patient's room at Guy's with a slight limp. There was a large chronic abscess in the outer and front aspects of the thigh, extending down from the anterior superior spine ; in fact, in the exact position of that in the first case. There was no pain. All the movements were present, flexion and extension being slightly checked, apparently from the size of the abscess.

On May 21st, 1889, the abscess was laid open from end to end; a good deal of caseous pus was evacuated, and then the caseous pyogenic membrane was scraped away. Thinking I had to deal with a case similar to the preceding, a careful search was made for a sinus, which, at last, was found at the upper extremity of the sac, and admitted only a very small probe. A sequestrum was removed after enlarging the opening in the manner described in the previous case. It measured half an inch by three eighths and was oval in shape; and again a typical tubercular sequestrum. It was marked on one aspect by the depressions from the epiphysial cartilage, and the cavity left was bounded by a thin shell of bone only. During the whole of the operation the wound was constantly irrigated with warm and weak lotion, then, the cavity having been scraped, was filled with iodoform emulsion, which was well rubbed into the walls. The excess was squeezed out, and then the lips of the wound, which measured five inches by two and a half, were brought together without a drainage-tube, the usual dressings applied, and the limb put upon a single Thomas's splint. The first dressing was made on the eleventh day when the sutures were removed, primary union having taken place. The boy never had any pain. In six weeks he was sent home with the splint still on, and on crutches. He very soon began to walk, and six months later he possessed all the movements of the joint, could run freely about, and there was moreover, no shortening.

At the present time, May, 1891, two years from the date of the operation, the boy remains well. He can walk as if nothing had happened to him, and possesses all the movements of the hip-joint, and the limb is as long as the other. It is quite clear that though at the time of the operation I thought the whole diameter of the neck was involved, the greater part of the epiphysial cartilage was intact. At the operation, the capsule was seen rolled off the neck of the bone, and was punctured, and a probe put in to demonstrate the presence of the joint.

Remarks.—All who have studied the pathology of hip-joint disease, either from museum specimens or from the parts removed by excision, know well how common it is to find a caseous sequestrum lying in a cavity in the neck, and involving the epiphysial line. In my own experience this is the most common situation for a sequestrum. It was this knowledge that led me to hope, that in some cases where suppuration existed, the sequestrum might be removed without sacrificing

the joint, and I may add here that in the first case I was led to make such a diagnosis, by finding new bone deposited on the anterior surface of the neck, and that in the second I suspected it as the most probable cause of the chronic abscess.

Let me next call attention to the exceedingly minute orifice of the channel leading from the abscess sac into the cavity in the neck of the bone. In neither case would the ordinary surgical probe enter the aperture, and it was necessary to employ one not much larger than that used for the lachrymal duct. This fact leads me to think that many of the chronic abscesses of the thigh I have seen opened and pass into persistent sinuses have depended on this condition, and I would suggest a very careful search for an aperture at the top of the great trochanter.

It will be said, no doubt, that the cases, and therefore the results, are rare, but as I have suggested in the previous remark, I am inclined to think that when the ordinary chronic abscess, in the position in which it occurred in these cases, is carefully explored a good many hips will be saved, for I take it, that in most of these cases the joint ultimately becomes involved. I may add that the second case was looked upon by all as a simple chronic abscess. The same abscess is well known in connection with quiescent and nearly-recovered hip-disease.

The next point brought out by these two cases is the great superiority of the method of operating introduced by Mr. Barker. No doubt these cases are rare, but I am inclined to think not so uncommon. The first case treated on the old lines had to be dressed daily for many months, and owing either to the suppuration incident to this method, or to the prolonged rest, the joint is partly fixed, and unfortunately in a position of outward rotation. The second case healed primarily and was not dressed till the eleventh day. A small sinus formed some few weeks later but soon closed. This was not to be wondered at, considering the large size of the cavity, and that it was, in fact, bounded by bony walls. The next and even most interesting point is the fact that no arrest of growth has taken place in this case, nor is there at present any irregularity of growth, as might have been expected.

Finally, I bring these cases forward to illustrate the value of an accurate knowledge of the pathology of tubercular disease of the joints.

In this connection I may refer to a case presenting all the usual signs of pulpy disease of the knee, in which a caseous

abscess formed on the inner side. This was apparently in the capsule, but did not communicate with the joint. It was opened carefully, scraped out, especially towards the joint, treated with iodoform and closed. Primary union followed, all swelling of the joint subsided, and the child has a moveable and apparently sound joint.

XXXV.—*A case of Cerebral Abscess, twice trephined: hernia cerebri: recovery.* By Stephen Paget. *Read May* 8, 1891.

Albert H., æt. 12. Had scarlet fever three years ago. Last September he had a discharge from the left ear; it lasted for a fortnight, and was very offensive. After this, he had constant intense earache and headache, so severe that at one time he took up a knife to kill himself. He was always crying with the pain, night and day, sitting shivering over the fire, complaining that he ached all over, and that things were dancing about in front of his eyes. He could hardly get about, and once he fell down in the street.

I saw him in my out-patient room at the West London Hospital, some days before admission; the left auditory meatus was granular and very sensitive; I could not make out the condition of the membrana tympani.

He came again November 8. He was irritable, confused, and strange in his manner, hardly able to stand, unable to face the light, unwilling to be questioned or examined, weak and giddy. No discharge from the ear, no swelling about the mastoid. A few enlarged cervical glands. Hyperæsthesia of certain points in the supraorbital, temporal, and occipital regions of the affected side. No optic neuritis, no vomiting, no paralysis, no convulsions.

He was admitted at once, and remained thus for six days, irritable, drowsy, curled up in bed, resenting all interference.

November 14.—He suddenly began to vomit, and was sick four times: he rapidly became more drowsy, unable to sit up in bed without help; he could say only a few words in a slow, uncertain, querulous way, as if he were drunk. Slight congestion of the left optic disc; slight loss of power on the right side of the face.

November 15.—Well-marked left optic neuritis; well-marked right facial paralysis. Slight loss of power in the right hand. Tache cerebrale. He was very drowsy, and almost speechless. I trephined over the lower end of the fissure of Rolando. The dura mater was very tense; a branch of the middle meningeal ran across it. On incision of the

dura mater, the left pupil became dilated. The brain was tense and congested, and did not pulsate, or very slightly. I passed a director twice into the brain in vain; then I passed it 1½ inches forward and downward, and let out nearly an ounce of thin pus, not offensive. It escaped under great pressure; and, as it ran out, the left pupil contracted again. A drainage-tube was put in. There was troublesome bleeding from the meningeal artery, which was wounded in its canal in the bone; this was stopped at last with a long strip of iodoform gauze.

November 16.—Marked improvement; he sat up in bed without help, and was quiet and sensible. He spoke clearly and naturally, but could not find the right names for things; he wanted some milk, but could only point, and say, "I want some of *that*, it's over there." Temperature rose to-day to 102·4°.

November 17.—Friction sound, base of left lung. Drainage-tube shortened.

November 18.—Paralysis much less marked. He speaks plainly and quickly. Has fits of screaming and swearing. Remarkable appetite; he begged for solid food, and said, "I want to go home; they don't give me enough to eat here." Drainage-tube taken out.

November 19.—To-day I removed some of the gauze-tampon; but immediately there was a sharp hæmorrhage, and the boy began screaming and struggling. Chloroform was given at once, and pressure was applied till the bleeding stopped.

November 20.—Restless and noisy. Appetite ravenous.

November 21.—Slept well; general condition excellent, save for occasional fits of screaming.

November 22.—The rest of the gauze-tampon was removed without any further hæmorrhage. He seems to have lost all power of naming things; thus, he called a pair of scissors, "what you cut things with," and called a penny, "what you buy things with." General condition good.

November 23.—Not so well. Restless, feverish. Right hand weaker than it was.

November 24.—Much worse. Absolute paralysis of right hand; absolute loss of right patellar reflex. Temp. 102°, pulse 140. He was restless and irrational; the wound was very tense, and did not pulsate. Under chloroform, I passed a director and forceps down for 2 inches, and let out about an ounce of pus.

November 25.—No improvement; paralysis unrelieved; he lay prostrate and almost speechless, or restless, moaning and crying out; temp. 102°. I now trephined him again, lower down, just above the ear, then I passed a probe down through the upper trephine hole, and passed a pair of urethral forceps in through the lower trephine hole, so as to touch the lower end of the probe. This let out nearly an ounce of pus, free from smell, but much thicker than before. I put in a large tube, and stitched it to the scalp.

November 26.—Marked improvement; patellar reflex has come back, and he can use his hand again; he speaks more clearly, and is more intelligent.

November 28.—General condition excellent. He seems still to have no power of naming things. He says 'Mister' or 'Sister' to whatever is shown to him—a penny, a watch, a bandage, he called them all 'Mister,' but he recognised the right names when I said them. He holds things close up to his eyes, as if very shortsighted.

November 29 and 30.—He became more and more restless and irritable, screaming and crying out.

December 1.—Much worse again; very noisy, upsetting the whole ward with screaming; pulse 120; grasp weaker; increased orbital pain with ptosis; has vomited once; is less sensible. In the upper wound there is increased tension, pulsation is less, and the scar is breaking down. In the lower wound the tube is forced half out, and moves to and fro as the brain pulsates. Under chloroform I took out the tube, and there came a teaspoonful of thick pus, very offensive, and a clot of blood. There was immediate increase of pulsation at the upper wound. I now washed out the cavity with perchloride, in at the lower wound, and out at the upper wound.

Next day I washed out another small clot, and left out the drainage-tube, finding it did nothing but harm. Two days later there was hernia cerebri; a convolution lay just beneath the fringe of granulations at the posterior angle of the upper wound. The boy was still unable to name things, or would use the same word for everything. But from this time he began to mend. A week later he recognised people, and would play with the other boys in the ward. There was still some optic neuritis. A week later he could play with games and puzzles, and was getting his speech back. The hernia cerebri was controlled by pressure, and slowly disappeared. The lower wound was sometimes tense, and indeed at one time the boy may be said to have had a double hernia of the brain. But gradually it all

healed; the optic neuritis disappeared; the screaming fits became less frequent, and finally ceased when we began to treat them as punishable offences. The facial paralysis became less, but did not disappear. He left the hospital for a convalescent home Feb. 20th.

Remarks.—The diagnosis in this case was not difficult. There was a clear history of discharge from the ear. Then, after some weeks of intense headache, with giddiness and clouding of the mind, and without fever, came vomiting, with optic neuritis of the diseased side, and rapidly advancing paralysis of the opposite side. There were spots of exquisite tenderness in the supra-orbital, malar, and occipital regions of the diseased side, and there were no symptoms pointing to the mastoid or to the lateral sinus.

As regards the treatment, he was trephined, but so high up that the abscess was not properly drained. On the third day he had a touch of pleurisy. On the fifth day there was hæmorrhage into the abscess cavity from a branch of the meningeal. On the tenth day the paralysis returned, and was not relieved by the letting-out of pus. On the eleventh day he was trephined again lower down, and thick pus was let out. On the eighteenth day the paralysis again returned, and fetid pus and a fetid blood-clot were let out, and the cavity was well syringed through. Two days later, there was a hernia cerebri; and after this he gradually got better.

A very interesting feature in the case was his loss of the names of things. He would describe an object, or would give the wrong word for all objects, calling them all 'Sister' or 'Mister;' but he recognised the right name when it was told to him.

Another remarkable thing was his voracious appetite. Even at his worst, when he seemed dying, he ate and drank greedily; he used to beg for food, and would eat more than any man in the ward—great plates of meat for breakfast and dinner, and altogether an extraordinary quantity of food. I have collected notes of five other cases of injury to the same part of the brain, published by Charcot and others, in all of which there was the same voracious appetite for food and drink.

I wish to give my thanks to my colleagues who advised me in this case, especially to Mr. Ballance, and to say that the boy owes his recovery to the admirable skill of his nurses, and the unwearied care and watchfulness of Mr. Eccles, his house surgeon.

Cases of Voracious Appetite and Thirst after Head-injuries.

Case 1. A man, æt. 18, was struck senseless by a blow on the right side of the head. Fever and intense headache followed, and extreme thirst. He returned to work in a few days, but the thirst persisted. Three weeks after the accident he was well in all other respects; digestion good, appetite normal; but he was tormented with thirst, drinking over 30 litres in twenty-four hours. Throat dry, saliva scanty. Opium gave him no relief, but he got better under large doses of valerian.*

Case 2.—A man, æt. 18, was kicked on the forehead by a horse six years ago. He was unconscious only a few minutes, but the wound did not heal for a month. He says that from that day to this he has been tormented with thirst night and day. He also ate voraciously. He drank 6 or 7 litres by day, and 2 or 3 by night. During an attack of smallpox he was freed from his thirst.†

Case 3.—A man fell from a scaffold; bruising of right frontal region, hæmorrhage from left ear, and other injuries. Unconscious for five days. He then began to keep asking for food and drink; he was incessantly begging and crying for it; and, in a few days, he got to drinking 14 litres in twenty-four hours. Then his thirst gradually subsided.‡

Case 4.—A man, æt. 27, fell from a height on his head. Compound fracture right frontal bone. Eleven days unconscious. This was followed by intense and constant thirst; he drank 25 litres in one day. He had other lesions also; some loss of vision, some paralysis, headache, giddiness, insomnia. The thirst got better as these other troubles got better; and in three months' time he was almost well.§

Case. 5.—A young man fell from a waggon on his head. Hæmorrhage from left ear; fracture of base. Five days

* *Arch. Gén. de Méd.*, 1860, p. 608.
† Charcot, *Gaz. Hebd.*, 1860.
‡ *Arch. Gén. de Méd.*, ibid.
§ Ibid., p. 359.

unconscious. Then he became inordinately hungry, complaining constantly, and even crying for food. Six pounds of bread daily, besides other articles of diet, were insufficient. No special thirst. The ravenous appetite lasted ten weeks, then it ceased.*

* *Lancet*, December, 1890.

XXXVI.—*A case of Typhoid Fever with occlusion of the femoral artery during convalescence and with acute maniacal attacks.* By Sidney Phillips, M.D. *Read May* 22, 1891.

J. A., æt. 29; male; coal porter; always enjoyed good health; was laid up for three weeks in 1887 after a fall on the back. Since then subject to occasional attacks of giddiness.

About August 20, 1890, he began to have headache and sickness, but continued work till the 31st, when he took to bed; since then he had been light-headed at night.

He was admitted on September 8 into St. Mary's Hospital, and came under my care in the absence of Dr. Cheadle, who, after he returned, kindly allowed me to continue in charge of the case.

On admission the temperature was 101·8°, the tongue dry and furred, the abdomen distended, and with a few typhoid spots upon its wall; the pulse was 76 a minute, frequently intermitting; the heart sounds weak, without murmur. Urine free from albumen. The case appeared to be a mild attack of typhoid fever at about the twelfth or fourteenth day, and went on well with no unusual incident; the morning temperature reaching the normal on the 14th, 15th, and 16th of September, when convalescence appeared to be commencing.

But on the night of the 16th September several fresh spots appeared; sudden acute pain was felt in the right hypochondrium, and the temperature rose to 101·8°. No abnormal physical signs were detectable over the seat of pain, which soon passed off, but the heart action was very weak and irregular, and quinine and strychnine were prescribed; the temperature, however, continued to rise, being 102° on the next day, the 17th; 103° on the 18th and on the 19th, and 103·6° on the 20th, after which it gradually fell, reaching the normal on the 23rd.

On the next night, the 24th, however, the patient was seized with sudden intense pain in the upper part of the left thigh, and the femoral artery became occluded. The temperature rose rapidly from 97·6° to 103·4° in the four hours

between 10 P.M. on the 24th and 2 A.M. on the 25th, but dropped again to 99° in the next four hours. At the same time retention of urine came on, the catheter being required for twenty-four hours. When I saw the patient at my visit on the 26th no pulsation could be felt in the arteries anywhere in the lower limb, though there was pulsation in the external iliac. There was much tenderness over the line of the artery in Scarpa's triangle and slight fulness of the superficial veins in this region; the limb was absolutely immoveable by the patient, and he said he felt a touch less well on the left leg and foot than on the right. The knee-jerk was present; the lower part of the leg and foot were swelled and pitted on pressure, the left calf being 12¼ inches in circumference as compared with 11⅝ inches on the right side; the left leg but not the thigh felt hotter than the right, and the surface thermometer showed a difference of 1°.

The limb was wrapped in cotton-wool with glycerine and extract of belladonna, and the lower end of the bed was slightly raised.

On the next day the limb was 5° hotter than its fellow; on the 28th the difference was 3°; on the 29th, 1½°. On the 30th the patient could move the leg a little, and slight pulsation could be felt in the femoral artery. At this date a localised patch of bright red colour appeared on the inner side of the arch of the foot, threatening sloughing, but this soon passed away.

The pulsation gradually increased in strength and the œdema slowly subsided. By the 6th October the limb could be freely moved about by the patient, but was still 2° hotter than its fellow, and remained from 1° to 2° higher for another fortnight.

While this improvement was going on in the condition of the limb the patient had attacks of a peculiar kind.

On the 29th September, five days after the blocking of the artery had occurred, the temperature suddenly rose from the normal, where it had stood for two days, to 103·2°, dropping again to the normal in a few hours with free epistaxis. The heart sounds were very irregular and the first and second sounds spaced.

From the 29th September uninterrupted progress was made with a normal temperature chart, but on the 11th the temperature rose again suddenly to 102·6°, and the patient had a sudden access of great excitement, almost amounting to mania; he used abusive and foul language, insisted on dressing

himself and on getting up to go home, though he had not been out of bed for seven weeks. He was eventually with much difficulty persuaded to return to bed. A similar maniacal attack occurred on the 19th with a rise of temperature to 103·2°.

On the 23rd October he was allowed to sit up in an arm-chair, but on the 24th the temperature ran up to 106·1°; he became very excited and would dress and walk up and down the ward, and the pupils became widely dilated. I saw him four hours later and he consented to remain in hospital, but later in the day he insisted on leaving the hospital, and did so.

During his stay there was never anything abnormal visible with the ophthalmoscope.

When he left his left leg was very weak and the pulsation in its arteries very feeble, but his general condition was improving.

Mr. Felix Roth, the clinical clerk, who had taken much interest in the case, called at the patient's home at my request, and he came to see me on the 19th November. He had been to work for one day, but his leg had swelled up again immediately and there was a red flush upon it.

After he had rested a week I saw him again; these symptoms had subsided, his temperature was normal and his general health much improved; the pulsation was still feeble in the arteries of the left lower limb, but he was able to walk well, and went to work on the next day.

Remarks.—The interest in this case lies in the paroxysmal attacks of pyrexia during convalescence, and the symptoms which accompanied them. In all there were six such attacks. That which occurred second in point of time was accompanied by occlusion of the femoral artery. The irregular and weak heart action which existed throughout the case might have given rise to either embolism or thrombosis, but the sudden onset of the occlusion with intense pain, rapid rise of temperature, and retention of urine, point rather to embolism than to thrombosis.

Occlusion of large arterial trunks is not a very common sequela of typhoid or other fevers, and when it does occur gangrene frequently results, as in the case of an adult female lately at the London Fever Hospital where amputation had to be performed for gangrene from embolism during scarlet fever.

Even in the child, gangrene may occur, as in the interesting case recorded by Dr. Drewitt in the *Lancet* of November, 1890, where embolism after typhoid fever also necessitated

amputation. No doubt the chance of the lower limb preserving its vitality depends to a considerable degree on the position of the clot with relation to the profunda artery. In the present case the artery was blocked close to Poupart's ligament and above the giving off of the profunda, unless it came off abnormally high up. The escape of the limb from gangrene indicated, therefore, an unusually free circulation through collateral channels, and in reference to this point the increased heat of the limb on the affected side is of much interest.

In most cases when a main artery is ligatured or occluded suddenly from any cause the distal parts become colder. Here there was an immediate increase in heat which persisted for over three weeks, amounted to 2° as a rule, and on one day reached 5°.

I believe an increase in temperature in parts under similar conditions has been noted in some instances of ligature of arteries, but I have not been able to find records of such cases, nor whether the rise in temperature was so marked or so prolonged as in this case. Though the ordinary collateral circulation might be sufficient, if very free, to keep the temperature of distal parts from falling below the normal, it can hardly be credited with raising it above the normal, and there must have been some active agency in producing this effect.

At the time the femoral artery became blocked, retention of urine came on; this seems most likely to have been brought about by a reflex spinal paralysis from the shock of the embolism, and it seems possible that the same shock led at the same time to a reflex paralysis of the vaso motor inhibitory nerves of the arteries of the leg and foot.

As Dr. Gaskell has shown, these nerves arise from the lateral group of cells in the anterior cornua of the spinal cord, and pass out with the anterior roots in the sciatic plexus; they belong, in fact, to the same group as the visceral nerves which innervate the detrusor urinæ. Any influence, therefore, which would affect the centre in the cord for expulsion of urine might give rise to a similar paralysis of the vaso motor constricting nerves of leg and foot.

The retention of urine passed off in twenty-four hours, while the increased heat of limb lasted three weeks; this fact seems to militate against the explanation I have suggested; but it is possible that active dilatation of the arteries once set up, the subsequent heat of the limb may have resulted from inflammatory changes consequent upon it.

Besides the sudden attack of pyrexia which accompanied the occlusion of the femoral artery, there were five other similar paroxysms of fever, but accompanied with less definite local symptoms. The first of these was attended with sudden pain in the right hypochondrium, and the fever lasted for several days; possibly it was an exacerbation of the typhoid fever itself, for some fresh spots came out at the time, but seeing the very weak and disordered action of the heart throughout the case, and the coincident local pain in the hypochondrium, it appears probable that an embolism became lodged in that region.

Of the other four attacks, one was followed by free epistaxis; with each of the other three there were maniacal attacks, and in the last the temperature rose above 106°.

Attacks of mania may follow any of the fevers, but they are not, I think, usually recurring paroxysms with rises of temperature as in this case. In the so-called "acute delirious mania" which is associated with fever the course is also different from what it was in this case, the mania and fever usually going on together for some time and not in paroxysmal outbursts, as occurred here.

It is probable that these attacks were only signs of functional nerve disturbance in an emotional individnal, though it is not impossible that they were of embolic origin. I have thought this case worthy of reporting to the Society on account of the various incidents which occurred during the patient's convalescence, viz.—

Firstly: The occurrence of embolism—certainly in the femoral artery and probably also in other parts.

Secondly: The complete recovery of the limb after blocking of the femoral artery, and the persistent elevation of temperature in the distal parts of the limb which succeeded the occlusion, and

Thirdly: On account of the peculiar maniacal attacks accompanied by transient sudden rises of temperature—in one instance to a remarkably high degree.

XXXVII.—*A case of Leucocythæmia.* By W. M. Ord, M.D., and S. M. Copeman, M.D. *Read May* 22, 1891.

THE patient whose case is he represented was under observation, excepting during short intervals, from May, 1888, to January, 1891. The notes are consequently somewhat voluminous. The main facts are, therefore, set forth in the following statement:—

A. J., a schoolmaster, æt. 36, was admitted for the first time to George's Ward, St. Thomas' Hospital, on May 8, 1888. He was admitted for the sixth time on December 29, 1890, quitted the hospital at his own request on January 18, 1891, and died the following morning. Altogether, nearly three quarters of the time during which he was under observation were spent by him in hospital, and in the intervals he came pretty regularly to the ward for inspection and treatment. When first seen he presented a considerable enlargement of the spleen, which, according to careful notes taken at the time, occupied the whole of the left side of the abdomen, and, in the umbilical and hypogastric regions, passed to the right of the middle line, extending downward to within two inches of the symphysis pubis. The organ was firm and its outline was well defined. There was no fluctuation, redness, or tenderness over it. The notch could be seen and felt just above the umbilicus, and a secondary notch could be felt between three and four inches lower down.

The patient stated that towards the end of 1886, not having previously been ill, he began to notice that his abdomen was enlarging in the upper part of the left half.

On January 1, 1887, he fell and struck his left shoulder against a chair, not very severely, but an hour after he felt an acute pain in his side which lasted for three days. This pain recurred one year before admission for a short time. The splenic enlargement had gradually increased without pain or tenderness. There had been no sickness or diarrhœa, appetite had been good; he thought that he had not lost much flesh: he complained of gradually increasing weakness, with palpitation on exertion, vertigo, and bleeding from the nose and gums. He had a slight cough, no dyspnœa, and suffered from transitory griping pains in the abdomen.

The blood under the microscope was so crowded with leucocytes as to look at first sight like pus, the red corpuscles being scattered about in irregular masses, without formation of rouleaux. The white corpuscles varied greatly in size, some being exceptionally large, others smaller than normal. All had a perfectly circular outline and gave no indications of amœboid movement. The larger corpuscles appeared to contain a fluid mixed with granules of various sizes. The red corpuscles were large and soft but of a good colour. Two drops of blood taken respectively from the patient and a healthy man were placed on white blotting paper for comparison. No difference in quality or intensity of tint could be recognised. As regards other abdominal organs, it may be stated that the liver was somewhat enlarged, that there was no ascites, and no tenderness in the abdomen.

The urine, of sp. gr. 1025, yielded a good trace of albumin, and a very large number of rhomboidal uric acid crystals mixed with urates. The temperature was 98.°

These are all the points which need be, at this stage, gathered from the notes. The following points in the further history appear to be worthy of notice.

The spleen gradually increased in size but not altogether continuously. When the patient was at rest in hospital it mostly underwent diminution. A very little exertion or excitement in the intervals of hospital stay were followed by enlargement. At the last admission the tumour extended from the seventh rib in the axillary line to Poupart's ligament, and at least two inches to the right of the middle line at the level of the umbilicus. For the most part the enlarged organ was not tender to the touch, but whenever he went out of hospital and moved about he experienced pain, and tenderness was marked on readmission. There was at no time evidence of peritoneal inflammation, but the tenderness appeared to be due to sudden swelling of the spleen. There was at no time any palpable change in the consistence of the enlarged spleen.

Liver: While the patient was under observation, the liver underwent a steady enlargement, at first firm, afterwards softer, without pain or tenderness. The presence of a small amount of fluid in the peritoneal cavity was from time to time noticed, particularly on the last admission.

The accessory symptoms were throughout few. The patient lost colour, strength, and weight, but intermittently. His intellect remained perfectly clear to the last. He had headaches of much severity which were relieved by citrate of

caffein. The only external hæmorrhages were from the nose and gums, but a note will be found, made by Mr. Nettleship, that at one period retinal hæmorrhages were detected. There were no noteworthy disturbances of temperature.

The urine at the time of his admission contained a small quantity of albumin. For a long time subsequently none could be found, but in his last admission a small quantity was present. No casts or blood-cells were seen.

Treatment: The treatment consisted in the enforcement of absolute rest, in a generous diet, and in the administration of hypophosphite of soda with liquor arsenicalis. A pint of Woodhall Spa Water was also given daily. In each admission he manifested improvement however determined. When for any reason the administration of arsenic was interrupted, he asserted that he fell back, and was urgent in his request for the resumption of the drug.

Remarks by Dr. Ord.

The first point of interest is the considerable duration of the illness which can certainly be traced back as far as the end of the year 1886. In fact the time during which the patient was under observation exceeded the two years stated by Dr. Gowers in his article on Leucocythæmia in *Quain's Dictionary* to be the average duration of the disease in sixty-three cases. Some explanation of this unusual duration may be found in the comparative absence of complications. The only external hæmorrhages were slight in amount; there was no diarrhœa, dropsy, or pyrexia. The beneficial effect of arsenic in the treatment must also, I think, be recognised, and the fact that under its influence the blood changed so far as to fail to yield crystals, readily produced when arsenic was not being administered, appears to me to have considerable interest. I used the Woodhall Spa Water in the treatment of this case in consequence of having seen considerable benefit result in one case of leucocythæmia from a course at Woodhall Spa. The subject was a gentleman who had suffered from symptoms for more than two years, and who survived in improved health and with reduced spleen for several months after his course, dying eventually in Spain of a sharp attack of dysentery.

Dr. Copeman's Remarks on the Blood.

In connection with the examinations of the blood which

were made in this case at various times there are, perhaps, one or two points deserving attention. It is unfortunate that the reports are but few in number, still they illustrate fairly well the pathology of the blood in this disease, and although nothing very novel has been found, we believe that they may be of some use in affording confirmation of the work of former observers.

The blood was, throughout, not only less coloured but more opaque than is the case in health, so that it was usually somewhat difficult to make an observation with the hæmoglobinometer. Such opacity was due to the presence of a largely increased number of white corpuscles, which had apparently for the most part undergone what may be termed "senile atrophy," since they usually contained numbers of granules, some obviously of a fatty nature, while when examined on the warm stage for a lengthened period, no amœboid movements could be detected. Many, if not all the leucocytes present, would therefore appear to be no longer living, and thus there is justification for the old term "suppuration of the blood," which has been applied to this disease. Quincke, as the result of recent work on the number of leucocytes present in the blood in health, has estimated it as 7134 per cubic millimetre, this giving an average proportion of 1 white to 731 red corpuscles. In the case under consideration the number of white corpuscles varied within somewhat wide limits, ranging from 185,000 to 410,000, 460,000, and on one occasion 530,000 in the cubic millimetre. The number of red corpuscles during a similar time ranged from 2,052,000 to 3,510,000, and the proportion of white to red at any one time varied from 1 in 8 to 1 in 4. Of the white corpuscles, three varieties could be distinguished, one of normal size which stains deeply with methylene blue; others, roughly about three times as large, which do not stain nearly so deeply with that reagent; and a third form, usually about half as large again as an ordinary leucocyte, containing a quantity of granules which stain of a deep purple colour when treated in the same manner, and which appear to be indentical with similarly staining corpuscles found by Dr. Sherrington in the blood in cholera. Von Jaksch believes, in spite of Bizzozero's assertion to the contrary, that it is possible to ascertain what form of the disease is present by determining the prevalent character of the leucocytes in the blood. He states that when small leucocytes predominate, the leukæmia is of a lymphatico-splenic type, and that when, on the other hand, larger cells

alone are found we are justified in concluding that the disease is splenic. From what has already been stated, it will be seen that such a contention was not borne out in the present case.

The red corpuscles occasionally showed a tendency to the formation of rouleaux, but at other times it was altogether absent. The changes in form described by Quincke under the term Poikilocytosis were always well marked, many of the corpuscles being crescentic, spindle-shaped or pyriform. In addition nucleated red corpuscles were found from time to time, and blood-platelets were as a rule present in much more than normal numbers. Since these bodies have apparently some connection with the genesis of fibrin, their increased numbers, found more particularly in the earlier stages of the disease, may possible account for the greater rapidity of coagulation which was then apparent.

When the blood was shed, the red corpuscles broke down after a longer or shorter interval, and the hæmoglobin, which then became diffused through the plasma, first underwent reduction, and then, under favorable circumstances, appeared in the crystalline form, usually as rectangular plates.

It should here be remarked, that if the patient had been taking arsenic for any length of time, it was not possible to obtain crystals of hæmoglobin in specimens of blood removed from the body and mounted in the usual manner. As stated in the notes, however, if the arsenic was discontinued for about a week, crystals were again found, while again their appearance was prevented by a renewed exhibition of the drug. A similar series of events has been noticed in pernicious anæmia.* This effect of arsenic in lessening the vulnerability of the red corpuscles was tried on several occasions in the manner indicated, and each time the result was the same. For a time, at any rate, it would appear therefore, that arsenic exerts a direct influence on the corpuscles, so that the hæmolysis is restrained, while also, as Dr. Stephen Mackenzie suggests,† since arsenic has been shown to diminish the glycogenic functions of the liver, it is possible that it may also exercise some influence in restraining the hæmolytic function of this organ. In this connection should be mentioned a series of observations by Barton,‡ on the effect of arsenic on the red corpuscles in this disease. By the use of the hæmacytometer from day to day he found that

* *St. Thomas's Hospital Reports*, vol. xviii, p. 103.
† "Lettsomian Lectures," *British Medical Journal*, 1891, vol. i, p. 275.
‡ *Therapeutic Gazette*, 1888.

during the administration of this drug, the number of corpuscles gradually rose to a maximum, the rise being replaced by an immediate fall when the arsenic was discontinued. Even though this was the case, it would still appear to be desirable to stay the administration from time to time, for if this be not done the cumulative effect may even be harmful rather than the reverse.

The total amount of hæmoglobin of the blood was found to be considerably below the normal amount in all the observations made, the diminution being even more than in proportion to the lessened number of red corpuscles; a point in which resemblance is seen to what obtains in chlorosis rather than pernicious anæmia. Thus, on one occasion, when the red corpuscles numbered 3,510,000 in a cubic millimetre, the hæmoglobin power of the blood was 51 per cent., and on another, when the corpuscles numbered 2,166,000, the amount of hæmoglobin present was 32 per cent. The estimation of the colour was somewhat difficult owing to the turbidity of the blood, even when considerably diluted with water, so that the usual form of hæmoglobinometer is comparatively useless, but fortunately we possess in the tintometer an instrument by which this difficulty may be overcome.

For the purpose of estimating the relative numbers of red and white corpuscles respectively in the blood, a tinted fluid consisting of a 10 per cent. solution of Dresden telegraph ink (methyl violet) in normal saline solution was used for diluting the blood when using the hæmacytometer. In this way the white corpuscles were stained a violet colour while the red remained unaffected.

Occasionally, in specimens of blood put up for microscopic examination, colourless oblong crystals were seen, which have previously been described by Charcot, Robin and Vulpian. They were never seen in the freshly drawn blood, but appeared after it had been allowed to stand for a time. In the blood obtained post mortem they were found in considerable numbers but of a slightly different shape. Their exact constitution is unknown, but they are probably derived from the breaking down of the white corpuscles.

The specific gravity of the blood was not greatly lowered at the commencement of the disease, being 1052·3 when the patient first came under observation, but it afterwards fell gradually, a density of 1043·5 having been recorded some months before the fatal termination.

A fuller report of the symptoms and progress of the

case, condensed from the notes taken in hospital, is here appended.

Andrew J., a schoolmaster, æt. 36, was admitted to George Ward, St. Thomas's Hospital, on May 8, 1888.

Family history.—Father's side: Father is said to have died of fatty degeneration of the heart aged sixty-four. His father had two brothers, one of whom died young of fatty degeneration of the heart and left no family; the other died also without issue, cause unknown. His paternal grandfather died of some throat affection; had married late in life; his paternal grandmother lived to old age.

Mother's side: Mother is living and healthy; she has one brother living who has one child, both healthy; one of his mother's brothers died of phthisis and one of alcohol; his mother's father suffered from gout, her mother lived to an old age and was always strong. Patient has four brothers and five sisters who are in good health; he is a single man.

Previous history.—With the exception of measles he has never suffered from any illness previous to the present; there is no history of ague, acute rheumatism, jaundice, typhoid fever, scarlet fever, alcohol, syphilis, or bone disease.

Present illness.—Towards the end of 1886 he first noticed that his abdomen was enlarging in the splenic region. On January 1, 1887, he fell and struck his left shoulder against a chair, not very severely, but an hour after he felt an acute pain in his side, which lasted for three days. This pain recurred one year before admission for a short time. The splenic enlargement has gradually increased without pain or tenderness. There has been no sickness or diarrhœa; appetite has been good; he thinks he has not lost much flesh; he complains of gradually increasing weakness, with palpitation on exertion, vertigo, and bleeding from the nose and gums. He has a slight cough, no dyspnœa, and suffers from transitory griping pains in the abdomen.

On examination.—An emaciated man, complaining of a tumour in the abdomen. Temp. 98°; Pulse 100, tense; arteries thickened and moveable; tongue clean.

Chest: Resonance good; breath and voice sounds normal.

Heart: Area of dulness begins at the second left costal cartilage; apex beat in the fifth space half an inch external to the nipple line; the impulse is diffuse and wavy; there is retraction of the intercostal spaces in the præcordium during systole; there is diastolic emptying of the veins in the neck

and some diastolic rebound; there is a systolic and (?) diastolic thrill; the first sound at the apex is reduplicated, the second is accompanied by a gritting murmur; there is a to and fro rub over the whole of the cardiac area, overlying the heart sounds.

Abdomen: No tenderness, no ascites, the superfical veins are enlarged; girth at level of umbilicus, 31 inches. Liver dulness begins at the fifth rib in the nipple line and extends to the border of the ribs; edge not felt.

FIG. 6.

(March 8, 1888.)

Spleen: Occupies the whole of the left side of the abdomen and in the umbilical and hypogastric regions passes to the right of the middle line; it extends to within 2 inches of the symphysis pubis; the organ is firm and its outline is well-defined; there is no fluctuation, redness, or tenderness over it; the notch can be seen and felt just above the umbilicus, and there is a secondary notch below the umbilicus.

Urine 1025, acid, turbid with urates, a considerable trace of albumin, no sugar, some indigo; microscopically—no casts, a very large number of rhomboidal uric acid crystals.

Blood: There seem almost as many white as red corpuscles; the white vary in size greatly, some being exceptionally large, others proportionately small; the red corpuscles are large and soft, but of a good colour; they do not form rouleaux at all.

There is no œdema of the feet and legs; no scars or irregularities of the bones of the legs.

On the day after admission he was put on full diet and was ordered the following drugs:

℞ Sodii hypophosphitis, gr. xv.
Liquoris arsenicalis, ♏v.
Ex aqua ℥j ter die.

Woodhall Spa water, one pint daily.

The patient had attacks of epistaxis on May 11, 12, and 26.

On May 19 the albumin had disappeared from his urine and did not return. With regard to the spleen, on May 28, the edge was felt 3 inches below the umbilicus, on June 18 it was 2 inches, and on June 21, 1½ inch below the umbilicus. On his discharge on August 25 it extended 3 inches below that point and just to the right of it, and on that day the splenic dulness commenced at the seventh rib.

On June 5 the report on the blood was:—There are rather more red than white corpuscles, the red now form rouleaux; the white do not vary in size so much as on admission.

On June 15 his eyes were examined under atropine; the fundi were normal and there were no hæmorrhages.

On August 20 he had severe bleeding from the gums after the extraction of a tooth.

His weight on July 14 was 9 st. 8½lbs; on discharge, 9 st. 4½ lbs.

His temperature was once above 100° and once fell to 97°; on the whole it was about normal.

Abdominal measurements on discharge, August 25th.

	Right side.		Left side.
At umbilicus	15½ in.	...	15½ in.
3 inches below do.	14½ in.	...	16 in.
From umbilicus to ant. sup. spine .	6½ in.	...	6½ in.

Second admission.—November 28, 1888—March 11, 1889. He kept well until the end of October, 1889, when he tired himself by a long walk; after this he said his spleen enlarged rapidly for three days; complained of weakness in the legs, headache, giddiness, singing in the ears, and bleeding from the gums, but no other hæmorrhages.

On examination the spleen was found greatly enlarged, extending 4 inches below, and 3 inches to the right of the umbilicus; the two notches previously noted were well marked; it was firm, dull on percussion, not tender and moved with the diaphragm; there was also felt below the margin of the spleen

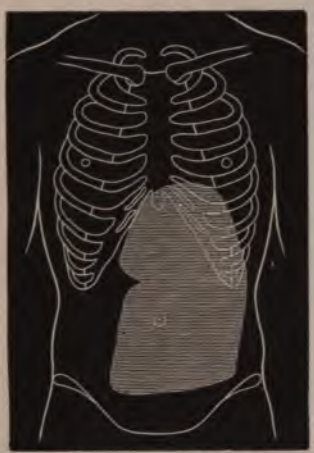
a small supplementary body projecting from under it towards the pubes, firm, with a well-defined edge like the spleen itself.

Liver was slightly enlarged, the thin edge being felt about 1½ inch below costal margin; there was resonance instead of dulness over its edge; there was no enlargement of abdominal veins and no ascites.

Heart's dulness from third left costal cartilage; apex beat rather diffused in third and fourth spaces in the nipple line; first sound at the apex prolonged and muffled; first sound at pulmonary area rather rough and prolonged, second sound healthy.

Eyes: No optic neuritis or hæmorrhages. Urine: Clear, slightly alkaline, no albumin or sugar.

Fig. 7.



(December 6, 1888.)

Fig. 8.

(December 15, 1888.)

December 18.—Report on the blood by Dr. Copeman: The blood as obtained from the finger is of a fairly normal colour, but coagulates somewhat more rapidly than usual. Under the microscope the white corpuscles are seen to be very numerous, although the fact that they have no tendency to run together makes them appear even more numerous than they are relatively to the red. The hæmocytometer gives their number as 410,000 in a cubic millimetre, or about fifty times the amount found in health, while the proportion to the red corpuscles actually present is as 13·5 : 100. The size of the white corpuscles is very variable, the largest being more than

twice the size of a red corpuscle, the smallest about one half. The red corpuscles are diminished in number to 60 per cent. of normal. They are fairly regular in size, but the consistence of the stroma seems somewhat lessened, as a few are tailed or spindle-shaped as seen from above, instead of circular, and they readily break down in a covered preparation. They tend to run into rouleaux, but not to so great an extent as in health. Their individual colour is up to the normal standard. In addition to the ordinary red and white corpuscles a few intermediate or coloured nucleated corpuscles are also seen. Blood platelets are present in great numbers, as nearly as possible equal to those of the white corpuscles. Here and there they are seen in various stages of disintegration, forming in places what are commonly recognised as "lumps of protoplasm." The specific gravity of the blood is but slightly lower than normal, being 1052·3. The patient was put on the same treatment as before; his weight on admission was 8 st. 9½ lbs.

On December 21, it was noted that the spleen and liver

FIG. 9.

(December 31, 1888.)

FIG. 10.

(January 4, 1889.)

were much decreased in size, and that there had been no hæmorrhages.

On January 4, 1889, the spleen was rather above the midpoint, between the umbilicus and the symphysis pubis; the general condition was much improved; there was no albumin in the urine.

On January 7 the spleen extended 1 inch below the umbilicus.

On February 4 he had an attack of epistaxis.

On February 11 a slight increase in the size of the spleen and liver was noted: the arsenic had been discontinued on account of abdominal pain and watering of the eyes. He went out weighing 9 st. 1½ lbs; his temperature was normal or subnormal throughout.

Third admission.—April 12—May 28, 1889.

History.—There had been gradual enlargement of the spleen and increasing weakness since his last discharge.

On examination.—Spleen: Dulness began at ninth rib, and was felt over the following area. Beginning at the ninth rib, the edge passed inwards and downwards, and was felt rather to the left of the ensiform cartilage; it then crossed the median line, and at the level of the umbilicus was about 1 inch to the right of it. It then gradually passed further from the median line till it reached a level midway between the umbilicus and pubes, when it made a curve and passed to the left of the median line, reaching nearly to the crest of the ilium. It, however, did not actually touch it, room for the finger being left; two notches were felt, one just above the umbilicus, the other below. The surface was quite smooth.

Liver dulness began at fifth rib; edge was felt about 1 inch below ribs in the nipple line; the surface was smooth and regular. The urine contained no albumin.

The blood presented the same characteristics as before. The fundi oculorum were normal.

He was given:

Sodii hypophosph., gr. v.
Liq. arsenicalis, mv.
Potass. iodid., gr. v.
Inf. gent. co. ad ℥j ter die.
And Woodhall Spa water.

No further note about liver or spleen.

Fourth admission.—July 6—September 14, 1889.

History.—Had increased in size since discharge. Had suffered from headache, weakness, and emaciation.

On examination.—Superficial abdominal veins distended. Splenic dulness from upper border of eighth rib.

Liver dulness from sixth rib; edge just felt 1 inch below costal arch.

Urine contained no albumin.

Eyes.*—Fundi: veins greatly distended and tortuous in their whole course; arteries also appear larger than normal but are not tortuous. On L. O. D. some small streaky hæmor-

FIG. 11.

(July 6, 1889.)

rhages near vessels going up and down. On right there is a diffuse dusky red patch occupying the upper margin of the disc. Œdema of retina in both eyes, more marked in the left, concealing the vessels in places; no white patches; no peripheral hæmorrhages; O. Ds. not swollen; veins paler than normal; toward periphery in left eye are superficial disturbances of pigmentary epithelium, probably left by former hæmorrhages.

Girth just above umbilicus 32½ inches. Suffered severely from headache throughout this stay in hospital; relieved by citrate of caffein. He gained 5 lbs. in first week, and then lost steadily, the weights being 8 st. 11½ lbs., 9 st. 2½ lbs., 9 st. 1 lb. There was a steady decrease in size of spleen and liver.

Dr. Copeman's Report on the Blood.

July 23.—The blood is light-coloured and more opaque than usual, from the large quantity of white corpuscles present, there being 530,000 per cubic millimetre, while from their large relative size they appear even more numerous. The red corpuscles do not run into rouleaux and are of various sizes and

* Mr. Nettleship's note.

shapes, many being pyriform and spindle-shaped. The hæmocytometer shows 2,166,000 in a cubic millimetre. The amount of hæmoglobin present is 32 per cent. of normal.

Fig. 12.

(October 5, 1889.)

Fifth admission.—October 5, 1889—August 10, 1890.

History.—Gradual return of symptoms, with epistaxis; pain in the spleen for three days before admission; no vomiting or diarrhœa; temp. 101·6°.

On examination.—Splenic dulness from seventh rib in axillary line. Right edge extended to just beyond the outer margin of the rectus abdominis; lower edge extended to within 1½ inches from the upper border of the pubes; left edge extended into the lumbar region, and could just be felt at the outer margin of the eleventh and twelfth ribs. The notches, two in number, were well marked, also the supplementary piece at the lower edge, on an apparently different level. The surface was smooth, firm, and tender on pressure, especially on the left border.

Liver dulness from lower border of fifth rib extending to costal margin; edge could not be felt.

Urine contained no albumen. There was no ascites and no fresh retinal hæmorrhages.

He was given Sod. Hypophos. gr. xx, and Liq. Arsenic. ♏v, ter die.

On October 12 the spleen was smaller, but he complained

of great pain in the left side of the abdomen and groin. He also suffered severely during this stay in hospital from headache, photophobia, and pains of a rheumatic character in the left shoulder.

FIG. 13.

(October 12, 1889.)

October 13.—Resumed Woodhall Spa water.

Dr. Copeman's Report on the Blood.

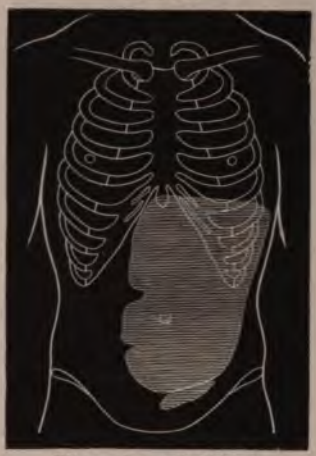
October 23.—Blood somewhat pale and coagulates very readily, sp. gr. 1052·3. Hæmoglobinometer gives the amount of pigment present as 44·5 of normal. Red corpuscles are crenated, oral, or pyriform, do not form rouleaux, and readily break down, the plasma becoming pink from the hæmoglobin. Their number is 2,052,000 in a cubic millimetre. The white corpuscles are circular in form, of various sizes, and coarsely granular, this being due in part to fatty particles. They stain very readily and show no amœboid movements on the warm stage; they number 460,000 per cubic millimetre.

October 26.—In the specimens of blood taken on October 23 it was found on examining them on the following day that in many places the red corpuscles had broken down completely, that the hæmoglobin had become reduced and had crystallised, while in places long colourless crystals, apparently

identical with those described by Charcot, were also found. The white corpuscles had not broken down to nearly the same extent as the red.

October 26.—It was noted that there was dulness with fluid thrill in the left flank.

FIG. 14.



(November, 20, 1889.)

November 28.—Red corpuscles = 3,510,000 in cubic millimetre. White corpuscles = 185,000 in cubic millimetre. Hæmoglobin power of blood = 51 per cent. The white corpuscles are of two kinds, one of normal size which stains deeply with methylene blue, and others, three times as large, which are always roughly circular, show no amœboid movements, and do not stain nearly so deeply with methylene blue. The number of blood platelets has apparently increased but they are difficult to count.

November 30.—On further observation of these specimens stained with methylene blue a third kind of leucocyte was found, about half as large again as an ordinary white corpuscle, which was full of granules which stain of a deep purple colour. These corpuscles seem to be identical with similar ones found by Dr. Sherrington in the blood in cholera. Whether these cells are really phagocytes or whether the granules are formed in the cells is uncertain. The peculiar reaction appears to be possibly due to some aniline impurity in the dye.

December 21.—Three specimens of blood were taken for the purpose of examining the length of time in which crystallisation of hæmoglobin takes place. These specimens were examined from day to day, and on the third day hæmoglobin crystals were found in two of them, while in the third there was reduction of hæmoglobin and an evident tendency to crystallisation.

March 23.—Note that the urine contained a trace of albumin for the first time since first admission. There were microscopically a large number of pus-corpuscles, but no blood; sp. gr. 1025, acid, urates.

Report on the Eyes by Mr. Nettleship.

July 25.—Veins very broad and tortuous, and rather pale. There are not any hæmorrhages, but the contrast between the vessels and other parts is less strong than usual, and there are appearances in parts suggestive of blood-staining of the retina; no white patches.

Sixth admission.—December 29, 1890—January 18, 1891. On admission: Splenic dulness began in the axillary line at the level of the seventh rib. The edge was very distinctly felt about 2 inches to the right of the middle line at the level of the umbilicus, and extended down to Poupart's ligament.

Liver dulness began at the level of the fifth rib in the nipple line, and the edge was felt at the level of the umbilicus.

Urine 1022; trace of albumin, urates, no sugar.

Blood: White corpuscles slightly in excess of red; the red ran into rouleaux; the white were of different sizes, the red of one size and pale in colour.

He was given Sod. Hypophosph. and Liq. Arsenicalis as before. His weight was 8 st. 11¼ lbs; temperature normal.

Patient went out at his own request on the afternoon of January 18. The weather was very cold and foggy, and he had to go to Brixton. On his arrival his mother said he was much upset, physically by the weather, mentally by emotion at his return home. Throughout the night he complained of dyspnœa, and would have the window opened. He took some liquid nourishment, but towards morning he began to wander and died very quietly about 7. 0. A.M. on January 19, 1891.

Post-mortem examination at 65, Dalberg Road, Brixton—30 hours after death—January 20, 1891.

Body emaciated; rigor mortis well marked; slight post-mortem staining about the abdomen.

Abdominal walls thin, and contain little fat; peritoneum very thick and glistening. On opening the abdominal cavity the spleen was not seen at first, the whole space being occupied by the liver, which extended to within 2 inches of the pubes; on drawing back the flap on the left side, the spleen was seen occupying the whole of the left hypochondriac and iliac regions, from the lower border of the thorax to the pelvis. There was a fair quantity of turbid fluid in the peritoneal cavity.

The liver was rather fatty in appearance externally; estimated weight 15—18 lbs. The borders, especially the posterior and the left, were very thin and recurved, the latter apparently by contact with the spleen. Gall-bladder distended; bile pale in colour; no calculi. On cutting into the liver the substance was found of a dull chocolate colour, and very diffluent, so much so that it was impossible to bring away any considerable portion for examination; Glisson's capsule thickened.

Spleen: anteriorly there was a large white plaque about the size of the palm of the hand; posteriorly some recent adhesions; a very firm adhesion band, of rather an older date, between the left border and the abdominal wall, rather above the centre of the organ, and of a superficial extent of about the size of a florin. The organ was not incised on removal.

Kidneys: large, pale, and firm; capsules thickened and rather more adherent than normal. The medulla of the lower parts of each kidney was invaded by yellowish fibrous tissue, apparently extending inwards from the cortex and almost obliterating the pyramids. In the upper portions the pyramids appeared normal but congested. Pelves not dilated; no abscesses; no calculi; a small superficial cyst containing rather thick dark-coloured serum in left kidney.

No congestion of intestines. Mesenteric glands not enlarged.

Lungs: pleuritic adhesions on both sides of some standing, most marked at base of right lung. Both lungs emphysematous; lung substance grey and crepitant; a little œdema at both bases posteriorly; no tubercles.

Pericardium contained about ʒij of serous fluid. Heart large; left ventricle considerably hypertrophied.

There were no enlarged lymphatic glands to be found anywhere in the body.

Throughout the examination on opening the large vessels the blood was found of the colour of chocolate, and of the consistence of the oil paints that are used in tubes by artists. This was well seen in the lungs and liver. There was no coagulation seen anywhere.

Portions of the thin borders of the liver and of the kidneys, some mesenteric glands, and some blood from the lungs, were taken away by Dr. Copeman for further examination. The spleen was taken away entire and deposited in the care of Mr. Shattock at the Museum of St. Thomas's Hospital.

XXXVIII.—*A case of Pulmonary Embolism.* By Leonard Remfry, M.D. *Read May* 22, 1891.

WHEN a patient is said to have suffered from pulmonary embolism and to have recovered, it is quite possible, not to say probable, that the accuracy of the diagnosis may be questioned. I, therefore, bring my case forward with a very distinct query before the title. What I wish to do is to lay the facts before the Society, and to ask you to help me to interpret the phenomena which presented themselves. In other words: If not pulmonary embolism, what was it? The story is a long one, and we can only very hurriedly scan the earlier chapters.

E. C., a married woman, æt. 33, was admitted into St. George's Hospital on July 17, 1889, complaining chiefly of abdominal pain which had been present for three weeks. The history of onset was extremely indefinite. The pain appeared to have come on rather suddenly. There was no collapse or pallor. She was not menstruating at the time, and her monthly courses had been regular. No shivering at any time. On examination the abdomen was generally distended. Dulness from 2 inches below navel to pubes, elsewhere tympanitic. On palpation, over the dull area was felt a rounded smooth immoveable tender mass, and on vaginal examination this was identified with an elastic swelling extending upwards from Douglas' pouch. The uterus appeared to lie to the front and right of the mass, and felt slightly enlarged. Sound 3 inches.

Per rectum.—The swelling was felt in upper part of recto-vaginal septum. The mass was thought to be a hæmatocele. The patient's temperature was 101° and the pulse 120.

During the next few days there was a marked change for the worse. The temperature varied between 99° and 102°, the pulse was usually 120, the tongue began to be dry, the abdomen became more and more distended, the intestines were blown up with flatus, the bowels ceased to act, and the patient was clearly going down hill fast, the increasing tympanites without any passage of wind *per anum* being the prominent symptom. On July 23 it was decided to aspirate the mass *per vaginam* and, if it contained blood or pus, to

make a free opening and drain. On aspiration it was found to contain blood. An incision was then made, and the finger passed through the opening found a large cavity filled by clot, which could easily be broken down. A large glass drainage-tube was inserted, and the cavity washed out with boroglyceride solution ʒj ad Oj. A moderate amount of old blood came away. After the operation the temperature gradually became normal, the tumour became smaller and smaller, the patient lost her pain, the tympanites gradually disappeared, and the bowels began to act regularly. It seemed therefore as though the mass had pressed on some portion of gut. The cavity was washed out daily with iodine and water, afterwards with carbolic solution 1 in 60.

On August 12 patient had a rigor, the thermometer registering over 105°. On passing a sound into the hæmatocele cavity a small quantity of very offensive semi-purulent discharge escaped from one side, where it had evidently become pent up. In the evening the temperature was normal, and continued so for several days. The patient was now considered convalescent—the temperature remained normal, the pulse and respiration were quiet and natural, the tongue was clean, the aspect healthy, and the general condition excellent. Such a note as this might well have been written the early morning of August 17. A little later, however, a great change took place.

It is the following part of the case to which I wish to direct your special attention. At 8.30 the douche was given as usual with the irrigator and glass tube, the patient in the left lateral position. It was decided this should be the last time of washing out, and perhaps the irrigating tube was moved about with greater freedom than usual, so as to make sure that no discharge should be left pent up anywhere.

At 8.40 the operation was discontinued as the patient complained of some pain over the sacrum. Nothing occurred for three or four minutes. Then, without the least warning, she was suddenly seized with extreme dyspnœa, the breathing being very tumultuous and all the accessory muscles being brought into action. The face rapidly became deeply cyanosed. Inspiration and expiration were at first equally marked. After about a minute of hyperpnœa the breathing became very slow and sighing. The patient was perfectly unconscious. No pulse could be detected at the wrist. Extremities cold. Corneæ insensitive. Pupils of medium size and equal, not reacting to light. Reflexes abolished.

Inspiration was soon more marked than expiration, and the inspiratory efforts succeeded one another with no regularity, the pauses between them becoming longer and longer, till finally breathing stopped altogether at 9.15. To all appearance she was dead.

The only thing now to try was artificial respiration and this was accordingly begun. All other possible means to restore her were employed. Hot bottles were applied to the feet and hot flannels to the head and chest; frequently repeated subcutaneous injections of ether and brandy and a brandy enema were given, the latter not being retained. Strong ammonia to the nostrils and galvanism to the precordial area were also tried. After artificial respiration had been kept up with regularity for one hour, the patient gave a faint inspiratory effort, and after a few minutes another one. In about half an hour more, inspiration and expiration began definitely to take place, though with great irregularity and feebleness. The artificial respiration was notwithstanding diligently carried on and not given up till 11.45, *i. e.* after having been kept up continuously for two and a half hours. The breathing was then rapid and shallow, and at times of the Cheyne Stokes variety. It soon become very feeble. After five minutes interval, artificial respiration was again employed up to 12.15 P.M. There was then slight corneal reflex, and the pupils reacted sluggishly. The pulse was imperceptible and the cyanosis still considerable. Even now the respiration seemed very unlikely to continue. At 12.20 oxygen gas was administered and this appeared immediately to turn the tide. Under this treatment the patient rapidly improved in colour, and the pulse now for the first time became perceptible at the wrist, though it could not be counted. After several administrations, which were continued till 12.45, the general condition improved greatly. The pulse rate was then 160, and the respirations 66. The extremities, which had been quite cold, now became warm.

Patient remained *in statu quo* till 4 P.M. when she began to recover consciousness. She was then extremely restless, throwing her arms about and moving her legs. Pulse feeble, intermittent, 120. Respiration 51. Face pale, lips rather blue, considerable dyspnœa.

A little later she spoke, and swallowed some beef tea. A quarter of a grain of morphia was injected hypodermically soon after which she vomited. She became quieter, though at times calling out. She had slight cough, lay on her right

side and cast off the bedclothes, her efforts being chiefly directed to remove all pressure from the right side of chest.

At 5 P.M. the pulse was regular, 110, but very weak; she swallowed some milk and brandy, but soon brought it up. At 6 o'clock the temperature was 97·5°, pulse 108, respiration 42. She spoke rationally and complained of thirst, also of pain in right side of chest. The right side of chest expanded less than the left. The abdominal wall moved with respiration, and there was no abdominal pain or tenderness. There was no cardiac murmur.

During the evening patient was very restless. Respiration about 40 and the pulse 114. She was ordered a chloral and bromide draught, but was unable to keep that or anything else down. Nutrient suppositories were then given every two hours.

She had a very bad night and did not sleep at all. The breathing at times was very rapid and shallow. Paroxysms of dyspnœa about every hour, lasting about ten minutes, with flushed face and sweating skin. The next morning (August 18) the temperature was 100·5°, the pulse 120, regular but small, the respiration 42. Slight cyanosis. Some cough, expectoration viscid, muco-purulent, scanty, slightly blood stained. No thoracic pain, but some in epigastrium. She continued to lie on her right side. On listening to back of chest, some coarse crepitations were heard over lower part of right lung, and a few finer ones over lower part of left. No tubular breathing. More complete examination not considered safe. During the day (August 18) she was very restless and seemed very weak. The dyspnœal attacks were not so frequent, but exhausted the patient a good deal. In the afternoon the temperature was 101·8°, the pulse 132, the respiration 30; the last, however, varied. Appetite very good. The expectoration was more purulent with a tendency to be nummular.

The next morning (August 19) the cyanosis had disappeared, and patient seemed better. The cough was still very troublesome, and she was ordered some senega and carbonate of ammonia. On making a very limited examination of the chest in front, the left side certainly expanded more than the right. All over both lungs there were rhonchi, over lower half of right lung behind large crepitations coarser than the day before, and over the lower lobe of the left lung numerous crepitations, but much smaller and not nearly so harsh. No tubular breathing.

On the 20th the cough was better and the sputum less purulent. Temp. 99°, pulse 122, resp. 45.

The next day, *i. e.* the 21st, four days after the sudden symptoms, the chest was again examined, and this time a patch of breathing, not harsh or blowing but very distinctly tubular, was heard over the middle third of the right lung behind, close to the spine, also some loud crepitations. No tubular breathing in left lung. Chest not percussed. The temperature was now normal, the respiration 42, the pulse 114. For three days the temperature varied between normal and 100°, but after that ranged between 98° and 99°.

To make a long story short the patient gradually convalesced. The cough and expectoration subsided, the pulse and respiration became slower. The getting up was delayed for a long time by the tardy healing of some burns on the legs caused by the application of overheated cloths during the efforts to revive her. However, when she left the hospital the lungs expanded equally, there was no difference in breath sounds on the two sides; and percussion, vocal resonance and fremitus were apparently equal. There was a soft murmur over the whole cardiac area. There was no deposit to be felt in the pelvis and the uterus was freely moveable.

In conclusion I would mention my chief reasons for thinking the case to have been one of pulmonary embolism.

1. The suddenness of the attack.

2. The tumultuous breathing followed by a few sighing inspirations, and finally, cessation of respiration.

3. The rapidly developing cyanosis which disappeared gradually, but not entirely so for forty-eight hours.

4. The occurrence subsequently of localised pneumonia in a small area of the middle of the right lung.

5. The inferior expansion of the right side of chest as compared with left. This was noticed directly after attack.

6. The occurrence of the attack after manipulation which might easily have dislodged a clot.

LIVING SPECIMENS

DESCRIBED BY CARD.

*** Published in accordance with the Regulation relating to the exhibition of living specimens at the meetings of the Society, viz. that "each case shall be accompanied by a card containing a brief description of the points it illustrates, such card to be retained by the Secretary for publication or not in the *Transactions* at the discretion of the Council."

I.—*Old Dislocation of both Radii, one backwards, the other forwards.* By W. G. SPENCER. *Exhibited October* 24, 1890.

THE patient was a girl, æt. 13½ years, and her mother had first noticed that pronation and supination were lost when her daughter was between five and six years. There was no history of accident, nor had the birth been difficult.

Both forearms were fixed in pronation, all power of supination being absent; but there was perfectly free movement, at the elbow, of flexion and extension.

On the left side, the head of the radius was distinctly to be felt below and slightly behind the external condyle.

On the right, the deformity was more obscure. When the shaft of the radius was traced upwards it led to a hard mass in front of the external condyle, which was covered and therefore partly obscured by the supinators. But, on firm pressure with the thumb, this hard mass could be felt to move with the forearm in flexion and extension, and to be distinct from the external condyle.

Behind the joint, the olecranon could be felt, and outside of the latter the edge of the lesser sigmoid cavity. When

the forearm was twisted the olecranon moved from the elbow, being slightly looser than normal, and the edge of the lesser sigmoid cavity also moved in a way which simulated the head of the radius. The decisive point in favour of a forward dislocation on the right side was the direction of the axis of the bone. And the objection that full flexion could be obtained was met by the fact that the dislocation had occurred when the head of the bone was only partially developed, and that, therefore, the head had probably become adapted to its position, or had made a hollow in the front of the external condyle.

The girl had learnt to supply the place of the lost supination by moving the elbow forwards and inwards.

II.—*A case of Hereditary Multiple Exostoses.* By C. E. Cotes. *Exhibited October* 24, 1890.

J. R., æt. 33, a fairly healthy-looking man, was admitted into St. George's Hospital with severe sciatica on the right side.

His history is as follows:—As long as he can remember he has noticed several hard lumps on both legs and thighs. These lumps, he fancied, increased in size up to about twenty-two years of age, and since then have remained stationary. He has never felt any pain or discomfort from them. For the past five years he suffered at times from sciatica on the right side, and on examining himself he noticed a hard lump at the upper and back part of the right thigh near the hip-joint. This lump, he fancies, has increased, and for the past six weeks he has suffered most severely from sciatica. There is no history of any similar lumps in his mother, father, grandfather, brothers, or uncles. He has five children, three girls and two boys. There is not the slightest sign of any lumps on either of the girls or the eldest boy, but the second boy, who is also exhibited, has several exostoses.

The father, J. R., has exostoses at both extremities of the femora, tibiæ, and fibulæ. As regards the upper part of the right femur, the exostosis is situated in close proximity to the sciatic nerve, and is attached to the back part of the great trochanter. Here he is extremely tender, and this exostosis,

by pressure on the sciatic nerve, is most probably the cause of the sciatica. There are small growths on the iliac crests, a few on the ribs and the left scapula. Nothing abnormal can be felt in the pelvis, and the upper extremities are not involved.

J. R., æt. 7, son of the above, has well-marked exostoses at the extremities of nearly all the long bones, at the epiphysial extremities of all the ribs, and in both scapulæ. The mother states that all these swellings are gradually increasing, but especially the one on the left scapula, which is now of considerable size.

III.—*A case of Arrested Development of the third, fourth, and fifth metacarpal bones in both hands.* By W. G. Spencer. *Exhibited November* 28, 1890.

THE patient, a domestic servant, æt. 40, has the third, fourth, and fifth metacarpal bones shorter by about ¾ inch than normal, whilst the first and second metacarpal are fully developed. As a result the three fingers to the ulnar side are correspondingly short, and the metacarpo-phalangeal joints are looser, so that a small gap is to be felt between the ends of the bones. The phalanges are of full length. The condition is symmetrical, and has existed as long as the patient can remember.

In the absence of all evidence of disease since birth, it may be concluded that the condition is congenital. I am not aware that the deformity has been noticed before.

The only explanation that suggests itself to me is that of abnormal pressure by the wall of the uterus upon the clenched hands of the fœtus, the extra pressure being applied to the three knuckles on the ulnar side of each hand. In consequence of the extra pressure on the heads of the metacarpals, the epiphysial cartilages between the head and neck of the bones may have been impaired, and thus the future growth of the bones in length lessened.

IV.—*A case in which two Symmetrical Congenital Mucus Secreting Cavities existed in the lower lip.* By W. ARBUTHNOT LANE, M.S. *Exhibited November* 28, 1890.

S. D., æt. 13, was admitted under my care into Guy's Hospital on November 10, 1890, suffering from harelip on one side. It had originally been double, but had been operated on when he was a child, union only taking place on one side. His father had a harelip also. The chief point of interest about the boy was that he presented two slit-like orifices placed transversely in the anterior aspect of the lower lip and on each side of the middle line (see diagram).

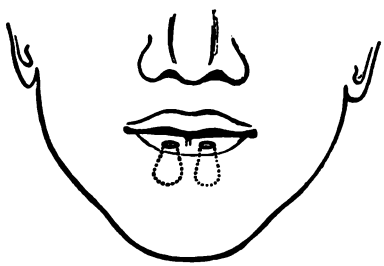


FIG. 15.—The firm outline indicates the orifice of each cavity, and the dotted line the limits of each saccule.

On introducing a probe it passed into a flask-shaped cavity, which extended beneath the mucous membrane almost as far as its reflection from the lip upon the jaw. Collected about each orifice were drops of material resembling the mucous secretion of the mouth in appearance. It was clear, viscid, neutral in reaction, and appeared to have no action upon starch. It was secreted more abundantly while the boy was eating than at other times. He sustained no inconvenience from this abnormality. Beyond the existence of the harelip the boy presented no other abnormal condition.

V.—*A case of Lupus which has recovered under treatment.* By Balmanno Squire, M.B.Lond. *Exhibited January* 23, 1891.

THE patient whose case I exhibit is a women æt. 35. But at the time when I finished treatment she was 28. She had been extensively affected for twelve years with lupus, which occupied the greater part of her left cheek. She was treated by me in the ordinary way, namely, by erasion and scarification, under which treatment she recovered completely. The erasion was performed with my modification of the German "sharp spoon." The scarification was effected with my "multiple linear scarifier." She has remained well until now, namely, during a period of seven years. Once or twice during this period of seven years she has come to me with a doubtful-looking minute speck which I have erased.

I bring this case forward with reference generally to Dr. Koch's treatment of lupus, and with reference in particular to a case of lupus treated by Dr. Koch's method, which was exhibited by Mr. Malcolm Morris and Dr. Pringle on December 12, 1890, at this Society, and published by them in full in the *British Medical Journal* for January 10, 1891.

One of the earliest statements regarding Dr. Koch's treatment was that it exerted a far more beneficial effect on lupus than the ordinary methods of treating that disease. I consequently exhibit my case, which has not been treated by Dr. Koch's method, for the purpose of comparing it with the other case.

In my case not only has the lupus recovered completely under treatment, but the patient has remained in that condition of complete recovery now for many years.

In a lecture on lupus published (subsequent to my demonstration of my case) by Mr. Jonathan Hutchinson in the *Lancet* of January 31, 1891, he says, "The patient, who was taken to Berlin by Mr. Malcolm Morris and Dr. Pringle, and was, for a time, supposed to be almost cured, is now, I am assured by both the gentlemen concerned, in a condition almost as bad as before the treatment." He further states, speaking of the prognosis of lupus under different kinds of treatment, "very few cases will be really cured, and in almost

all instances, even under the most careful and persevering treatment, an inveterate tendency to relapse or to a reproduction of the malady will be witnessed.

VI.—*Congenital Fistulous Channel in middle line of nose.* By W. ARBUTHNOT LANE, M.S. *Exhibited January* 23, 1891.

A. W., æt. 14 months, a male child, came under my observation, the mother calling my attention to a small tumour on the left nasal bone near the inner canthus, from which pus and cheesy material could be squeezed. She informed me that for the first time, four months ago, in this locality a tumour formed, and within a fortnight reached the size of a large pea. On taking the child to a children's hospital, the

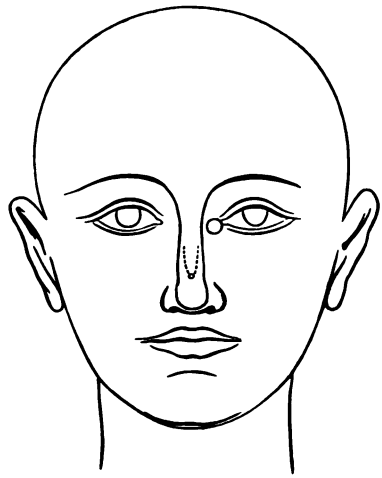


FIG. 16.—Diagram illustrating the apertures of the two congenital fistulæ. The dotted outline indicates the extent of the fistulous tract exposed by a median incision.

house surgeon excised the tumour. Since that time a whitish purulent looking material has continued to escape at intervals from the seat of the growth, and in the same position a

similar tumour re-formed in a few weeks. This swelled up and enlarged, apparently causing the child much pain. It then burst, purulent material escaping and the tumour subsiding. This was repeated on several occasions. On squeezing the swelling which had recently discharged itself, some curdy material could be expelled from a hole in it. While examining this I noticed immediately above the tip of the nose in the middle line a tiny depression, which resembled the dilated duct of a sebaceous gland, such as abound in the same position in the adult. The mother stated that she had observed it the day after the child was born, and that on squeezing it a little worm-like plug could be expelled. On introducing a needle into it I found that it could be passed upwards and a little backwards for a distance of about an inch and a half, whilst it appeared to impinge upon a portion of the horizontal plate of the ethmoid, behind the anterior limit of the frontal notch.

On the child being put under an anæsthetic, and a probe being introduced into the sinus in the swelling about the inner canthus, it was found to pass through a small foramen, apparently in the lachrymal bone, and to enter a cavity of considerable size, where it touched the needle introduced through the fistula in the nose.

On slitting up the latter, it was seen to extend from its orifice upwards in the form of a widely dilated tube filled with sebaceous material beneath the nasal bones.

Finding it impossible to get at the cavity in the skull, I broke a way through from it into the nasal cavity, and fixed in the aperture so made a large silk cord with a view of establishing a fistulous opening into the nasal fossæ, and so allowing the external fistulous openings to close. That portion of the nasal fistula, which I was able to expose, I excised.

VII.—*A case of Thiersch's Method of Skin Grafting.*

By Stanley Boyd. *Exhibited February* 27, 1891.

O. W., æt. 65, admitted to Charing Cross Hospital for an epithelioma of the leg, which began as a wart fourteen years ago, ulcerated two years ago, and has increased somewhat rapidly since. It is now a fungating mass 2¾ inches across;

femoral and iliac glands moderately enlarged. The patient has long suffered from a slight equino-varus of the right foot, which is quite unconnected with the growth.

December 10.—The growth was freely removed together with the deep fascia, to which it was slightly adherent, a more vascular surface was thus left, and there was much difficulty in stopping the oozing from a vessel in the line of the septum between the peronei and the extensor long. dig. Pressure was kept up upon the raw surface whilst the femoral and iliac glands were removed. Then large grafts were taken from the extensor surface of the left forearm, previously rendered aseptic, and the whole of the raw surface was covered with them. An ordinary alembroth gauze and salicylic wool dressing was applied. To cut these large grafts, the skin must be stretched and the razor should be pushed to and fro like a saw, parallel to the surface and just deep enough to draw blood.

December 20.—Dressed: about thirty drops of pus lay between the gauze and one part of the wound: little or no sign of irritation. Most of the grafts had united, a small granulating patch existed here and there, and a considerable one in the centre, where bleeding had occurred from the above mentioned septal vessel, and had raised the graft from the muscles. Fresh grafts taken from above the knee under cocaine were applied.

December 24.—Wound dressed, $4 \times 3\frac{1}{2}$ inches. Fresh grafts applied.

January 14, 1891.—Wound practically healed. Scar depressed $\frac{3}{4} \times \frac{1}{2}$ inch smaller than above measurements. Allowed to get up and move about a little.

January 21.—Discharged: bluish lines like veins formed beneath epidermis, so the scar is supported by a pad of wool and a bandage. The patient was thus enabled to get about as well as before the operation. The scar rose to the level of the surrounding skin; several bluish lines remain.

The advantages of this method appear to be:—1st, the possibility it affords of covering large, fresh, raw surfaces, and of obtaining a rapid healing with but little contraction. 2nd, it is applicable also to granulating surfaces. 3rd, the grafts are obtained from the patient whilst anæsthetized, and no scar of importance results.

On June 13, when the patient was last seen, the bluish lines beneath epidermis were almost gone. No further contraction had occurred.

PLATE VIII.

To illustrate Dr. Stephen Mackenzie's case of Multiple Lipomata.

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VIII.—*Case of Multiple Lipomata.* By Stephen Mackenzie, M.D. *Exhibited February* 27, 1891.

R. H., æt. 59, labourer. No family history obtainable. Has lived in London from an early age. No history of alcoholism, syphilis, or gout, or obesity in family. Acute rheumatism twelve years ago.

General fair health. Has mitral systolic murmur at apex, and some intermittency of heart beat.

The tumours appeared first on arms when patient was recovering from acute rheumatism twelve years ago, soon afterwards appearing on lower extremities. The tumours are occasionally painful, "especially in damp weather."

The tumours are situated only on the extremities.

No change has taken place in them while under observation (since November 14, 1890).

Treatment by alkalies was pursued for two months.

IX.—*A case of Serpiginous Rodent Ulcer of the Face of seventeen years' duration.* By Balmanno Squire, M.B. *Exhibited February* 27, 1891.

I DEMONSTRATE this case, not only on account of its considerable interest from the point of view of diagnosis, but also on account of the great rarity of the disease.

Rodent ulcer in its *ordinary* form, that is to say, its *perforating* form, may fairly be called a *rare* disease. But in the form now before us, namely, its *serpiginous* form, it is an *extremely* rare disease.

The interest of this disease, from the point of view of diagnosis, is very considerable.

Here, in *this* case, may very well arise the question of a cancer of the lip. Indeed, according to some authorities, this case would have to come under the category of an epithelioma of the lip, although it is certainly not a cancer of the lip.

But this disease may be taken for other diseases than cancer, as happened in a case of this kind which I saw in this country some time ago.

It may also be taken for lupus.

The disease is therefore entitled to claim interest, not only as an extremely deceiving subject for diagnosis, but also as a very rare condition. I might also add that it is capable, on occasion, of assuming a very formidable appearance.

I have seen this serpiginous form of rodent ulcer occupying the greater part of the scalp. I have seen this disease in another case occupying the whole of the back of the trunk.

As to the *details* of this case, the patient, a married woman, is now 54 years old. The disease commenced after marriage. She married at the age of thirty-six and has six children living, the eldest of whom is eighteen years old.

The patch on her face began to show itself, as a small spot, seventeen years ago, namely, at the age of thirty-seven years (which age, by-the-bye, is a more or less favourite age for the development of rodent ulcer). The patch, which is limited to the left side of the face, commenced by a pimple, situated half an inch vertically below the left angle of the mouth, therefore within, but not in, the centre of the present patch.

The patch has spread at a much more rapid rate during the past three years than it did in the previous fourteen years of its existence. For example, three years ago it was only half the size that it is now.

Although the disease has lasted seventeen years it has only attained by now a diameter of two inches. During the first fourteen years of its existence it had only attained the diameter of one inch. It thus illustrates the extremely slow progress which is characteristic of rodent ulcer.

By far the most characteristic, and most accentuated, part of the disease is comprised within a radius of half an inch from the left angle of the mouth, whereas the extreme limit of the patch is at a radius of about 1½ inch from the left angle of the mouth. So that at the angle of the mouth there is a disc of accentuated disease, this disc being the size of a shilling. Outside this disc, and away from it, is an eccentrically placed, and very thin, ring of disease.

The area between the margin of the disc and this outer ring consists for the most part of white cicatrix. This cicatrix is probably the result of previous energetic cauterisations, mentioned by the patient. But here and there on

this intervening area are scattered nodules or tubercles of active disease.

On the margin of the lower lip, near the left angle of the mouth, namely, for a distance of rather more than half an inch, the disease is especially pronounced and especially characteristic. On the disc of disease by the angle of the mouth there are several small superficial ulcerations, each of which is covered with a thin scab.

The name serpiginous *rodent* ulcer may seem a misnomer for a disease which sometimes, as in this case, presents so little ulceration. The name rodent ulcer was, however, originally given to the commoner or perforating variety of the disease.

Now the *perforating* variety, inasmuch as it eats very deeply indeed through cartilage, bone, and any other tissue that stands in its way, truly deserves the name of rodent ulcer.

However, this *serpiginous* variety of the disease (although it does not penetrate deeply, but, on the contrary, is always quite superficial in character) resembles the perforating variety both histologically and also in its naked-eye characters, with the exception only that its ulcers are superficial instead of being deep.

It should be mentioned that the serpiginous form of the disease is not nearly so dangerous as the perforating variety.

The histological characters of this example of the disease have been investigated by Mr. D'Arcy Power, who has kindly examined an excised portion of the morbid skin for me and has sent me the following report:

"I have no doubt whatever that the piece of tissue you sent to me on February 18, was a small rodent ulcer. You will see from the accompanying section that the superficial layers of the epidermis are as yet unaffected, whilst there is a very considerable infiltration of the true skin, with a very small-celled epithelial infiltration. This epithelial invasion is in masses, and not in finger-like processes, as is usually the case in epithelioma, and there are no cell nests. The sebaceous glands are unduly enlarged."

X.—*A case of Rhinophyma after operation.* By Balmanno Squire, M.B. *Exhibited February* 27, 1891.

I DEMONSTRATE this case because the result here arrived at is, I may, perhaps, venture to say, a very satisfactory one. The patient, a gentleman, æt. 65 years, has been affected with rhinophyma for the past five years. Furthermore, he has for many years been affected with an eruption of rosacea on his forehead and cheeks. It was only the *tip* of his nose that was affected to any notable extent by the swelling, not the wings of the nose, nor the bridge of the nose. But the *tip* was affected so considerably that it hung down over the upper lip and the mouth, so as to partially eclipse the commissure of the lips. This tumour occasioned him embarrassment in eating and drinking.

The plan I adopted in this case was to carve out the end of the nose, just as one might carve a piece of wood.

One of the main difficulties of such an operation arises from the circumstance that the nose is a hollow structure, having very thin walls, so that there is some risk of cutting holes into the cavity of the nose, which holes, of course, would be irremediable. Another difficulty arises from the flabbiness of the tumour, and of the wings and tip of the nose.

But the most serious impediments to obtaining a good result are, for one thing, that the weight of the tumour has permanently dragged down the tip of the nose, and thus deformed the natural shape of the cavity of the nose. So that it is difficult to re-construct a natural-looking nose-tip, without cutting into the distorted cavity of the nose. Then, for another thing, the wings and bridge of the nose, although not notably enlarged as compared with the tip, nevertheless are swollen and thickened, so that if the tip of the nose were to be carved out, in strict imitation of its original shape and size, it would look grotesquely pinched and small in comparison with the rest of the nose. Hence arises, in cases such as this, a necessity for carving out the end of the nose of such a size and form as shall harmonize with the rest of the nose. It is therefore needful to form it somewhat broader than it originally was. Furthermore, for a reason already stated, it

is necessary to make the end of the reconstructed nose dip down a little lower than one would wish, in order to avoid cutting into the distorted cavity of the nose. However, the result obtained in this case is such, that it may be fairly claimed for it that the patient would no longer attract any notice in the streets; and that, even in a well-lighted room, his appearance would not suggest the idea that his nose had ever been operated on.

The *ordinary* plan of operating on a rhinophyma of this kind is to excise in one or more places a wedge-shaped piece of the thickened skin, and then the sides of the wound are brought together. This plan leaves the nose covered with true skin, but is never satisfactory from the point of view of shape.

The late Profesor Hebra, of Vienna, recorded a case quite similar to my case, in which he removed the elongated tip of the nose by means of Professor Dittel's elastic ligature. He then cut out from the skin all round the stump conical pieces, whose bases were turned towards the stump. He next folded together, over the stump, the resulting tooth-like processes of skin, and fixed them in position with plaster. He explained that he was afraid to remove the hypertrophied nose-tip with a knife, for fear he should not be able to control the bleeding. However, this fear was very groundless. His anxiety to cover over the raw surface with flaps of the hypertrophied skin was also quite needless, and must have been fatal to the production of a shapely nose.

In my case I removed the enlarged nose-tip with the knife, and found I had no difficulty in controlling the bleeding.

Professor Hebra relates, that it took twelve days for the elastic ligature to cause separation of the mortified nose-tip. The chief point in my case is that it shows that the best plan is to be content with simply cutting off the superfluous structures. It is no advantage to try to make the surrounding skin cover over the raw surface. The cicatrix left by the simpler operation is, on the whole, very skin-like and unnoticeable; while one is left, with a free hand, to produce as shapely a nose as is possible under the circumstances.

A rhinophymatous nose does not lend itself, in the least degree, to the covering over of a wound with the surrounding skin. It is not as if the skin were thin and loose. All the surrounding skin is not only enormously hypertrophied and indurated, but is also firmly bound down to the subjacent structures, and has lost almost absolutely its normal elasticity.

XI.—*Three cases of Hydatids of the Kidney.* By E. Hurry Fenwick. *Exhibited February* 27, 1891.

Case 1.—E. B., æt. 46, was sent to me January 31, 1891, by Dr. J. Nicoll, of Stoke Newington, on account of the occasional passage *per urethram* of hydatid cysts. The patient states that for the last thirty years he has had a tumour in the right side, which has caused him no inconvenience. During the last five years he has occasionally passed grape-like bodies in his urine—the evacuation of the cysts taking place at intervals of several months—the size of the cysts varying from that of a pigeon's egg to a pea. Some were entire, others were ruptured, being mere collapsed sacs. He has suffered urethral pain, though not great, on each occasion.

Present state.—Patient is a well-built, healthy-looking man, complaining only of dyspeptic symptoms. Occupying the position of the right kidney is a tumour the size of a fœtal head, which can be grasped bimanually and moved freely to and fro in the loin. There is neither tenderness nor pain in this region. It is elastic, and obviously in connection with the front face of the kidney. No hydatid fremitus can be elicited. The urine is normal. Patient declines operative interference.

Case 2.—J. L., æt. 58, consulted me in reference to the passage *per urethram* of hydatid cysts. On the first occasion he brought eight ounces of sacs which he had evacuated at one urination the day before. His history is as follows:—From the age of seven until nineteen he was a "gully" boy in the sewers, his duties being to call the various men at work in the sewers. He then became an artificial flower maker. Thirty-one years ago he had an attack of left renal colic, and passed a small grape-like body. These attacks have continued ever since, usually taking place three or four times a year, though once or twice a whole year has elapsed without such an occurrence. At first the cysts were smaller so that he did not notice them, but they have gradually increased in size, and the colic has become correspondingly more severe. The cysts up to a year ago used often to come away singly or

two or three at a time, latterly they also have so increased as to be innumerable. His account of the usual character of these attacks is worth recording.

"The left testicle gradually becomes numbed, then painful, until the agony is unbearable. Then the left kidney commences to ache, causing me to ram my fist into it. The pain in the left testicle subsides as the agony in the left kidney increases. Then I feel a dart or two—perhaps only one dart—at the penile meatus. I know then that the cysts have entered the ureter; there is no pain along the track of the ureter but the kidney pain becomes awful, and I roll over and over on the floor or on the bed or dash about the room. Suddenly all pain ceases, and I know they have reached the bladder. I now pass the cysts without pain in the urethra. Fifteen years ago there was always a little blood with the water when the pain was gone; the attack lasts eight or nine hours. Sometimes the cysts are passed singly, and then I have only slight pain in the kidney, and even when I am talking to people I may feel them drop into the bladder. This kind are a little larger than peas. If they collect then they cause the colics."

During the last year he has passed more than all he has evacuated during the thirty years of his illness, and the attacks have taken place every two or three weeks. Latterly, within a month of his consulting me, the character of the urine has changed; "instead of being clear with pellucid bodies or grape skins, it has become like thin gruel."

Present condition, September 17, 1889.—Patient comes suffering from the effects of a recent attack, he is pinched and white, tongue is very foul, pulse is weak, and the surface of the body is cold. His urine contains much pus besides the broken and entire cysts. It is decomposing (the fresh urine was subsequently found to contain triple phosphates, pus, bacteria, uric acid crystals). There is a fœtal head-sized tumour in position of the left kidney. It feels extremely hard and inelastic. No hydatid fremitus, but it is tender on pressure; it is evident that the sac is suppurating. I offered to drain the sac, but the patient objected. He was placed on alkalies. Gradually the urine cleared, the pain ceased, and the attacks of renal colic became more and more rare. The sac has also contracted until it is now comparatively small.

Case 3.—J. R., æt. 25, sent to me from Bedford by Dr. Edgelow in October, 1890.

History.—Eight years ago patient had an attack of right-sided pleurisy after a fall. He was examined and told that he had a swelling in his right loin. In the same year he passed two hydatid cysts, and a few days before coming under my care he passed a handful of the same "like grape skins." He has had occasional darting pains in the right loin.

Present condition.—There is a distinct tumour visible in the right hypogastrium apparently elastic, but which has no hydatid fremitus on percussion. Its size is about that of a large cocoa-nut. To the left of this and connected with it there are some rounded tumours the size of hens' eggs; these extend as far as the navel. The percussion note over the tumour is dull if the impact be light, but a heavier stroke elicits a certain amount of resonance. There is slight movement of the entire mass on deep inspiration, and on grasping it bimanually it can be readily dislocated into the right loin. On percussing the right kidney posteriorly, it is found that the area of dulness occupied by its posterior surface is much enlarged. Patient is in good health. Urine 1020, amber coloured, acid in reaction, no albumen.

On October 30 I made an incision in the right linea semilunaris over the tumour, and exposed a multilocular hydatid cyst. It was attached on all sides, and especially behind, by adhesions. The cyst was aspirated, then opened, and the orifice stitched to the abdominal wall. A drainage-tube was inserted after the evacuation of the daughter cysts. The sac suppurated and gradually contracted and he made an excellent recovery.

Before leaving for the country he mentioned that after the sinus was washed out with carbolic he noticed that the urine scalded him. On the supposition that there was a connection still remaining between the contracted sac and the renal pelvis a weak solution of soda salicylate was thrown into the sinus and the urine immediately tested, with the result that the same salt was found in the urine.

I have selected these three cases from a series of six urinary hydatids which have been under my care during the last two years in order to illustrate: (1) *Hydatid inactivity*—a sac remaining innocuous for twenty-five years. (2) *Hydatid activity*—a sac discharging for thirty years, the case terminating in a spontaneous cure. (3) The operative interference of renal hydatid sacs from in front.

XII.—*Extroversion of the Bladder in a Male: a case illustrating the result of plastic operations for the relief of the malformation.* By WILLIAM HENRY BATTLE. *Exhibited April* 24, 1891.

S. H., æt. 10, sent from Belfast, was admitted to the Royal Free Hospital on February 4, 1891. There is no history of any deformity or malformation in the family. He is the third of five children, was born at full time, and with the exception of the annoyance caused by the malformation has enjoyed good health. For the first six months he is said to have had much pain, especially when the bowels acted, and had constant diarrhœa. The skin also was excoriated near the exposed mucous surface. Since then he has had no pain. When aged three years and a half he had an operation performed at St. Bartholomew's, but the nature of this cannot be learnt. Since that operation, however, some urine has trickled through an opening in the perineum behind the scrotum.

He is a well-developed healthy looking boy, with the usual difficulty in walking exhibited by the subjects of this malformation. He presents an extroversion of the bladder, the upper margin of which extends about half-way up to the level of the anterior superior iliac spines. The red exposed mucous membrane, which is very sensitive, forms a rounded projection rather more than 2 inches in diameter. At its lower part the openings of the ureters are visible. Below, the swelling the glans penis is seen cleft on its upper surface, the floor of the urethra being continuous with the mucous membrane above.

Passing from the under surface of the penis to the perineum, under the scrotum, is a sinus, the remains of the former operation, through which urine trickles. The pubic bones appear to be separated from each other by an inch and a half, and the recti are separated in their whole extent, more widely in the lower, 4 inches. There is no trace of an umbilicus. The tumour caused by the projection of the mucous membrane is surrounded above and laterally by scar-tissue, from which it is separated by a deep fossa lined by mucous membrane. Around the lower part the superficial tissues are soft and loose.

About an inch above the extroversion and to the left of the middle line is a small hernial protrusion, the covering of which appears to be very thin.

Operation.—Under chloroform on March 7. The patient strained slightly while taking the anæsthetic and the hernial protrusion became very evident; the upper limit of this was marked by an analine pencil. A point, Fig. 17 (3), above the

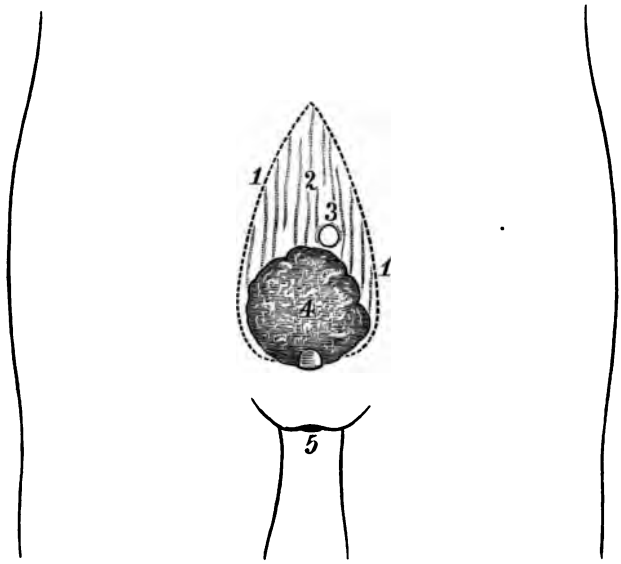


FIG. 17.—Diagram showing, 1, the primary incisions, 2, in the formation of the supra-vesical flap. 3. The position of the hernia. 4. The extroverted mucous surface. 5. The subscrotal opening remaining from the old operation at St. Bartholomew's.

hernial protrusion was marked (corresponding to the distance from the mark just mentioned and the top of the scrotum), and an ovoid flap drawn, the incisions (1) for which were continued downwards into the scrotum on each side a short distance external to the extroverted mucous membrane (4). The incisions were then deepened along these lines, first on one side and then on the other, extending through the skin and superficial fascia of the abdominal wall, and the upper part of the ovoid flap (2) dissected downwards as far as the hernial mark. This flap was found to cover in the bladder; it was protected with warm sponges, and bleeding points secured.

Then the skin and subcutaneous tissue on each side were raised from the deep fascia for some distance over the abdominal wall, sufficient to permit of the margins being easily approximated by gliding them together towards a median line, Fig. 18 (6). All bleeding having been stopped, the whole surface was sponged with warm perchloride of mercury (1 in 1000).

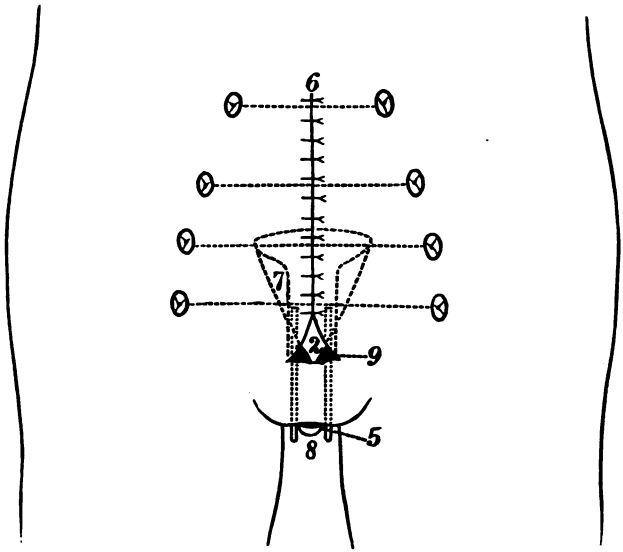


FIG. 18.—Diagram illustrating the condition of things after first operation. 2, 4, 5, as in Fig. 17; 2, indicating the apex of the flap attached to the scrotum; 6, the line of median union diverging on each side of 2, to give free exit to urine in case of necessity. The outline of the bladder margin as well as remainder of flap is indicated in 7; 8 indicates the penis with tubes in each side; 9, the openings on each side of the flap.

A continuous silk suture was passed from the apex of the bladder across from side to side through the skin, and drawn tightly so as to lace the margins together and diminish considerably the surface to be covered in. The old opening below the scrotum was enlarged by lateral incisions, and the penis drawn down beneath it into the perineum and secured there by a stitch, Fig. 18 (8). The flap first raised was then turned down over the bladder, and its apex secured by a stitch to the middle of the upper margin of the scrotum, where a small surface was pared to receive it. The lateral flaps

were then drawn together by ten thick silk stitches and four distant button sutures, to relieve tension. Small silk sutures were used to more accurately adjust the edges of the median wound, but a space was left above the scrotum on each side of the apex of the attached flap to permit the escape of urine, Fig. 18, should it be unable from any cause to run away below. A drainage-tube was placed on each side of the penis under the scrotal flap extending into the bladder, and stitched in position. A mixture of glycerine and iodoform was placed between the flaps, the buttons were protected by sal alembroth gauze, and the wound dressed with sal alembroth gauze and wool. The knees were tied together and the patient placed in bed, with his trunk well raised and in a sloping position, and a pillow under the knees, which was secured so as to prevent his slipping down; by this means urine was enabled to run away directly, and could not accumulate in the upper part of the bladder.

A good deal of shock followed the operation, but it was not certain how much of this was due to the chloroform, which he took rather badly, not only on this but on subsequent occasions. He complained of some abdominal pain, for which opium was given.

On March 12 there was some inflammatory swelling about the scrotum and hypogastric part of the wound; but this subsided under treatment.

No suppuration followed, and the stitches were gradually removed, the last one being taken away on the eighth day after the operation. Irrigation with boracic acid lotion was employed twice a day and the tubes cleaned. Considerable difficulty was experienced in keeping the tubes clear, as they readily blocked with mucus and phosphates, and as early as the second day urine escaped by the safety valve above the scrotum. The flow of urine over the buttocks caused rather painful excoriation.

On March 26 he was examined under chloroform and the bladder found firmly shut in, the silk stitch having come away of itself.

On March 28 he was allowed to get up again.

On April 1 the opening in the perineum was again enlarged, and the penis brought through and stitched down. The opening above the scrotum was pared, and its edges, Fig. 18 (9), brought together with wire sutures, the drainage being again provided for by tubes on each side of penis.

On the tenth day a little urine escaped through the wound,

DESCRIPTION OF PLATE IX.

To illustrate Mr. Battle's case of Extroversion of the Bladder.

FIG. 1.—From a water-colour sketch by Miss A. Benson, M.B.Lond. Shows the condition before operation, it indicates extent of the malformation, the position of the ventral hernia, and the site of the opening under the scrotum, which remained from some former operation.

FIG. 2.—From a cabinet photograph, taken about a fortnight after operation, when there was some œdema of the median scar, which with the scars of the sutures alone indicates the operation, if we except the changed relation of the penis to the scrotum and the unusual position of the new sinus urinarius.

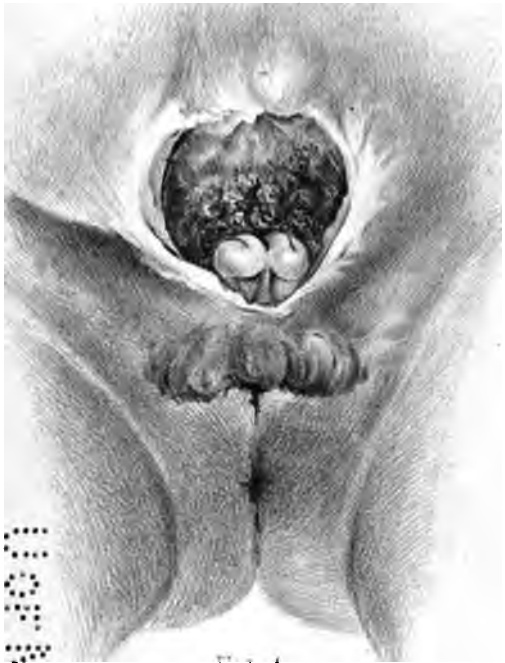


Fig. 1.

Fig. 2.

Danielsson & Co. lith.

but the opening closed at once on better provision for drainage through the perineum.

Now, with the use of a urinal made by Matthews, of Holborn, he is able to get about with comparative comfort, has lost the urinous odour which was so troublesome before, and has lost the anxious look which was observed and was probably the result of apprehension of injury to the exposed bladder. This urinal has a special air-valve for ventilation, and a tube placed conveniently to carry off urine when the patient sits down.

The chief points to which I would draw attention are illustrated in the first operation. They are briefly—The diminished width of flap rendered necessary by the lacing of the bladder across. The attachment of the apex of this flap to the scrotal margin above the penis. The safety-valve provided by leaving the median incision open above the scrotum to prevent extravasation, in case of blocking of the tubes below. The antiseptic applications and frequent washings. The button sutures, some of which passed across the turned-down flap, but did not exercise a pressure at all injurious to it.

Plate IX shows the condition before and after operation.

XIII.—*A case of Gastro-jejunostomy for pyloric obstruction.* By William Ewart, M.D., and William H. Bennett. *Exhibited April* 24, 1891.

Richard B., drayman, æt. 52, was admitted into St. George's Hospital on February 14th, 1891, under Dr. Ewart's care, for the relief of vomiting and of gastric symptoms suggesting pyloric obstruction.

His own previous record had been one of uninterrupted health, and his family history, as far as he knew, was exceptionally good.

Dr. Flux, of Highworth, who had attended him, reported that he had first complained of discomfort about the belly in July, 1890, but the patient dated the beginning of his illness from the early part of December, when he felt pain in the umbilical region, and occasionally vomited. He did not, however, give up work until Christmas, when the pain became

more severe, the vomiting more frequent (about once or twice a week), and he first noticed that he was losing flesh rapidly. These symptoms persisted, and during the last week he had vomited every morning abundant acid fluid, and had suffered severely from pain and flatulence after food. He had never had hæmatemesis. His bowels were inclined to constipation.

On admission he was much wasted, hollow-cheeked, with sunken eyes and very sallow complexion.

The thoracic organs were free from abnormality; but in the abdomen an elongated lump could be felt a little above and to the right of the umbilicus, equivalent in size to a Tangerine orange, and presenting a nodular feel along its right posterior border, which was separated from the hepatic dulness by a broad resonant interval. The area of stomach-resonance was much increased, measuring 7 inches vertically and $4\frac{3}{4}$ inches in the transverse direction.

On February 15th a tube was introduced into the stomach, and after removal of three pints of a very sour fluid, covered with a brown scum, the stomach was washed out with a large quantity of a weak sodium bicarbonate solution. He was ordered some hyposulphite of sodium by the mouth, and a nutrient suppository every four hours in addition to the diet ordered on admission (beef tea, milk, two eggs, light pudding, and a little bread and butter).

On the 18th all food by the mouth was cut off except half a pint of milk; and on the 20th the latter was also stopped. On the night of the 18th he had much flatus but no vomiting; but in the night of the 19th he vomited a pint and a half of sour fluid, in which sarcinæ were found. On the 20th the stomach was again emptied and washed out.

On February 24th complained of weakness. Had been kept awake by flatus. Temperature remained subnormal; pulse 72, as on admission. The body weight, which had been 8 st. 4 lbs. on admission, was now only 7 st. 6 lbs.

A consultation was held on February 25th, and, no doubt being entertained as to the existence of complete pyloric obstruction, it was decided to attempt its relief by operations. The stomach was again washed out on February 26th, P.M., and on the morning of 27th, and Mr. Bennett, who had seen the patient repeatedly with Dr. Ewart, operated in the afternoon of that day.

Operation.—The abdomen having been opened by a median incision extending from the ensiform cartilage to the umbilicus, the pylorus was easily exposed, and was found to be involved

in a hard rounded mass, which was quite free from any adhesions to the surrounding parts. As the nature of this mass was somewhat doubtful, the operation of gastro-jejunostomy was decided upon, and immediately performed by means of Senns' decalcified bone-plates, the end sutures being of silk, whilst the lateral ones were of carbolised catgut. The incision in the jejunum was made close to its upper end, which was easily accessible after *displacement of the omentum to the right side.* The opening into the stomach was on its anterior wall, and the tendency to tilting of the ends of the approximation plates was prevented by the use of four Lembert's sutures (two at each end). After the omentum had been replaced the wound in the abdominal parietes was brought together with silkworm gut and dressed antiseptically, no drainage-tube of course being used.

The patient was greatly collapsed after the operation, but rallied a little upon the administration of strong nutrient enemata and a subcutaneous injection of morphia. The operation was completed at 3.30 P.M., and at 7 P.M. a little vomiting occurred. At 10 P.M. (six hours and a half after the operation) Mr. Bennett saw the patient, and found his weakness so great that he at once gave him egg and brandy *by the mouth,* and ordered small doses of brandy and milk at frequent intervals throughout the night.

On the following morning (February 28), at 9.30, Mr. Bennett again saw the patient, and gave him three ounces of egg and brandy mixture. The patient had slept comfortably, was feeling well, and looked better than at any time since admission; he was entirely free from pain.

On the afternoon of February 28th he was ordered two teaspoonfuls of whey and a little brandy to alternate every hour with Brand's essence, also two teaspoonfuls of soda-water, and one teaspoonful of brandy at intervals.

On March 1st, after a fairly good night, there were some regurgitations (without any retching) of a little thick dark-coloured fluid. In addition to the previous diet, one teaspoonful of Valentine's meat juice was given every four hours.

On March 2nd slight regurgitations continue. Pulse 84. Urine acid, free from albumen, some sediment of uric acid. Tongue still dry, but clean. The temperature, which had risen to 99° on the evening of the 28th, has since then been normal and subnormal. The patient was ordered by Mr. Bennett to be raised to a half-sitting posture, in which he felt more comfortable than when lying. He was allowed some jelly.

March 3rd.—No further regurgitations occurred after he was raised; progress satisfactory; allowed a pint of peptonized milk. The wound was dressed, and was found to be free from inflammation and tenderness.

From this date convalescence continued without interruption. The wound healed soundly, and on March 13 a large solid putty-coloured stool (the first of this kind since the operation) was passed.

On March 14th he sat up out of bed.

On March 26th he was eating fish diet and drinking a pint of beer daily.

By the 29th the motions were of natural colour and consistence. The patient was discharged on April 23, having gained nearly 2½ stones in weight since the operation.

Continual careful observation failed to discover any sign of the bone-plates or sutures in the stools.

XIV.—*A case of Displacement of the Heart to the right side, the other viscera being normal in position: pulmonary stenosis with regurgitation.* By Francis H. Hawkins, M.B. *Exhibited April* 24, 1891.

Alfred M., æt. 12 years; height 4 feet 2 inches; circumference of chest at level of nipple line 27 inches; temperature 98·4°.

The head is somewhat enlarged; the eyes prominent; conjunctivæ pale; capillary vessels of the conjunctivæ are of a claret colour; palpebral mucous membranes are of a darker claret colour. The lips are bluish black in colour, while the buccal mucous membrane, the gums, and the tongue are of a bluish-purple colour. The teeth are regular, pearly white, and firm.

The ends of the fingers are bulbous and of a slaty-blue colour; the phalangeal joints are apparently enlarged, the enlargement being produced by dilated veins.

The ends of the toes are also bulbous and of a bluish-pink colour; over the anterior surface of the legs are some brownish patches. The skin generally is of a dusky colour.

The Thorax: Right half measures 13 inches; the left half 13½ inches (nipple level). The right nipple is on a slightly higher level than the left.

The præsternum has its anterior surface directed upwards, while the mesosternum (which measures 1¾ inches in length) is directed downwards and somewhat inwards. The mesosternum lies in a hollow which is formed by the cartilages of the second, third, fourth, fifth, and sixth ribs, receding at an acute angle from the ribs; thus a prominence is produced at the junction of the above-named ribs with their cartilages, which with the prominence of præsternum above forms a shape somewhat of a horseshoe with the mesosternum as the base.

The Heart: The heart impulse (apex) is seen on the right side of the thorax between the fifth and sixth ribs, one inch outside the right mammary line.

This is also proved by palpation. On percussion over the right side the upper border of the heart's dulness is found to be in the right mammary line as high as the third right rib, and in the right parasternal line as high as the second.

The right outer border of the heart (on the level of the fourth interspace) is found to be half an inch to the inner side of the right anterior axillary line.

On percussion on the left side (level of fourth interspace) the note is resonant up to the left side-sternal line.

There is no epigastric pulsation, and no pulsation or enlargement of the veins in the neck. A distinct thrill, which is systolic in time, is felt over the whole of the præcordia (right side). Its maximum intensity is apparently over the episternal notch.

On auscultating over the præcordia a loud rough blowing systolic murmur is heard, with its maximum intensity at the level of the second right rib and over the præsternum. This murmur is propagated into the neck, but is louder on the right side than on the left.

On auscultating over the second right costal cartilage, both a systolic and a diastolic murmur are heard; the diastolic is propagated down the sternum, and on auscultating towards the left side both a systolic and a diastolic murmur are heard, but on the outer side of the left parasternal line no murmur is heard.

On auscultating from the point of maximum intensity downwards and outwards both a systolic (which is the louder) and a diastolic murmur are heard as far as the anterior axillary

line (both murmurs becoming more indistinct) and the fifth interspace (apex). A systolic murmur is heard very indistinctly in the right mid-axillary line.

Posteriorly, a systolic murmur is heard on auscultating over the right supra-scapular fossa, and both a systolic and a diastolic are heard (very indistinctly) at the lower inferior angle of the scapula.

The upper border of the liver in mid-axillary line begins at the seventh rib, and liver dulness extends down from the seventh rib for 4 inches.

The stomach and the spleen are placed in their normal regions.

Urine: Sp. gr. 1015; acid; no blood or albumen.

History.—The patient is a full-term child, and when born was of a blue colour and has always remained so, being more so after exertion. He has had measles, but not scarlet fever or rheumatic fever. The father and mother are both healthy; one brother (older) had rheumatic fever four times. Another brother, also older, died from phthisis. One brother, aged twenty-two, has epileptic fits. The other children (four) are healthy. The mother states that while carrying this child she was frightened on seeing a man in a fit.

The patient has had an attack of epistaxis once. About two years ago he brought up (from what the mother states I am inclined to think this blood was vomited) about two pints of blood, and again in November last the patient brought up blood. At this time he also had œdema of the legs, and passed blood by the bowel; the urine, it is stated, was also dark at that time (blood?).

After this attack the cyanosis which had previously increased was much less.

Remarks.—Congenital displacements of the heart are of three kinds:

1. The very rare position of the heart too much to the left side. Two examples of this are to be found in the Breslau Museum, in which cases there was congenital phrenic ruptures on the right side.*

2. Displacement of the heart to the right side with the other viscera in their normal position. The case I now show is an example of this. Dr. Samuel Wilks† mentions having seen one case, and he mentions that one of the physicians of the Hospice des Enfans Trouvés met with four such cases.

* Otto's *Pathological Anatomy.*

† *Pathological Anatomy.*

The late Dr. Peacock* does not, however, record any such case, while Dr. Walshe† states that such a condition is very rare. Otto mentions that it does sometimes occur.

3. Displacement of the heart to the right with transposition of other viscera. This is the more usual congenital displacement. Dr. Peacock‡ mentions one such case which came under his observation, a boy aged eighteen years, in which the heart was placed on the right side, its apex beating an inch and a half below the right nipple, while the liver was situated on the left side. Other cases are recorded.

As regards the valvular lesions in this case, I am inclined from the position, character, and propagation of the murmurs to regard the case as one of pulmonary stenosis with some regurgitation.

It is also probable that the septum is imperfect.

XV.—*A case of Pulmonary Stenosis.* By Francis H. Hawkins, M.B. *Exhibited April* 24, 1891.

Ruth M., æt. 19; height, 4 feet 4 inches; circumference round shoulders, 27 inches; weight, 4 st. 13 lbs.; of slender build, with small arms, hands, legs, and feet. Temperature 98·4°.

The head is small, forehead slightly receded. Eyes are not prominent; conjunctivæ clear. Palpebral mucous membrane bright red. Face narrow, nose thick, especially at the tip, which is of a bluish-pink colour. Bluish-pink coloured patches over the malar bones, with a patch of similar colour over the chin. The lips are bluish black. The buccal mucous membrane is of a bluish colour. The upper teeth are much decayed; the lower are in a better condition. The gums are soft and bluish red in colour. The tongue is of a slaty-blue colour. The fingers are not clubbed; the hands and lower parts of the forearms are cold and pinkish blue in colour.

On the inner surface of the left forearm are two small nodules of dilated veins. The toes are not clubbed. The

* *Malformation of the Heart.*
† *Diseases of the Heart.*
‡ *Pathological Anatomy*, p. 417, op. cit.

fore-legs have some brownish patches over them. There is no œdema.

The jugular veins are not distended. The skin over the abdomen is of a pinkish-blue colour.

The thorax, which is much deformed, shows hollowing of the supra-clavicular regions and also of the infra-clavicular just below the clavicles.

The anterior surface of the præsternum is forwards, but at its junction with the mesosternum a considerable projection is presented. Below this projection the mesosternum (which is only 2 inches long) recedes. At the junction of the ribs with the cartilages a projection is formed which reaches from the second to the sixth rib on either side. The prominence on the right side is more marked, and is in advance of that on the left side.

The cartilages leave the ribs at an obtuse angle, taking a backward direction to join the mesosternum. There is some hollowing in the infra-mammary regions, which is more marked on the left than the right side.

The shoulders are rounded. There are nodules of veins in the right axilla. The movements of the thorax are generally deficient.

Heart: The apex-beat, which is indistinctly seen, is distinctly felt between the fourth and fifth ribs in the left mammary line. No thrill is felt at the apex. There is pulsation in the epigastric region, and a distinct systolic thrill is felt over the episternal notch, and on deep palpation over the second and third interspace.

Cardiac area: On percussion from above down in the left parasternal line the upper area of dulness is in the second interspace. The right border is not distinctly defined, but apparently does not extend beyond the right side-sternal line.

Auscultation: On auscultating over the pulmonary area a high-pitched blowing systolic murmur is heard. The maximum point is over the præsternum and to the left side, and is propagated to the left side of the neck, but diminished in intensity on the right side, both of the sternum and in the neck.

At the apex the murmur is heard, but with it is a loud first sound; the second sound is not heard. The murmur is indistinctly heard in the axilla.

The murmur is heard posteriorly at the lower part of the supra-spinous fossa on the left side, also distinctly in the interscapular area. It is indistinct at the angle of the scapula,

and is slightly heard on the right side over the supra-spinous fossa.

The pulse is regular, 112; small, easily impressible. The other organs are normal in position and function.

History.—The patient is a full-termed child. While carrying this child the mother had some difficulty in obtaining proper nourishment. Beyond the fact that the child was small at birth and did not grow like the other children nothing was noticed until the child began to run about, when the mother then noticed that the lips and face became blue. The child has had measles, but no other illnesses. The patient is very nervous, and on excitement or great exertion becomes much more cyanosed than when at rest. She also suffers from vertigo, faintness, and frequent epistaxis. The father and mother are strong and healthy. The grandmother on the mother's side had rheumatic fever, and died from heart disease. The grandfather on the mother's side lived to be eighty. One brother (older) has phthisis. The other brothers and sisters are quite well and strong. The patient has always been amenorrhagic.

Remarks.—This case I regard as one of pulmonary stenosis; and while it is probable that there is also an imperfect septum—for Dr. Peacock states that "if the evidence of obstruction at the pulmonic orifice be tolerably conclusive, we may safely infer there is either a deficiency in the septum of the ventricles, or a patent foramen ovale, for one or other of these defects almost invariably co-exists with that condition,"—yet, nevertheless, it is interesting to observe that there is no clubbing of the fingers in this case; whereas in recorded cases which I have looked up, "clubbed fingers" is a uniform factor in cases of pulmonary stenosis with imperfect septa.

Another interesting feature in this case is the distribution of cyanosis; for while in the former case marked cyanosis of the mucous membranes was present, and less cyanosis of the skin, in this case the mucous membranes of the eyes are not at all cyanosed, and the buccal mucous membranes slightly (in comparison with the former case). The cyanosis of the skin of the face is at times extreme, the face being almost black.

XVI.—*A case of Fæcal Fistula after operation.* By William Hy. Battle. *Exhibited May* 22, 1891.

A GIRL who was first admitted under his care in the Royal Free Hospital on November 16, 1888, when æt. 15. She was then suffering from an abdominal abscess with discharge at the umbilicus, and through an incision which had been made in the right groin a few months before. The abscess, which had been discharging more or less for seven years, began after an attack which was said to have been typhoid fever. Since its formation fæcal matter had been present to a varying extent in the discharge, though the bowels had acted regularly. Examination and exploration of the abdomen under chloroform proved the abscess to extend from umbilicus to pubes and from colon to colon. The effect on the general health was severe, and there was frequent micturition. A communication was found with the sigmoid flexure soon after its commencement, the opening being in the posterior and outer wall of the abscess cavity, and the sigmoid itself very thin and friable as far as could be felt. Attempts to close the opening in the sigmoid failed, and the bowel was ultimately brought up, completely divided, and sutured quite away from the abscess cavity, so as to permit no fæcal flow into the abscess.

This treatment has led to closure of the abscess cavity, and to such an improvement in the general health and comfort that the parents of the child are unwilling to have anything further done for her. Instead of being hectic and bedridden, she goes about and enjoys life.

She left hospital in August, 1889, but comes to show herself from time to time in the wards. The fæcal flow is now from the upper opening, nothing passes *per rectum*; there is at times marked prolapse through the upper opening.

DESCRIPTION OF PLATE X.

To illustrate Mr. Brodhurst's case of Skoliosis.

Fig. 1 (from a drawing) shows the case before treatment commenced.

Fig. 2 (from a photograph) shows the case cured, rotation and lateral curvature having been entirely overcome.

Fig. 3 (from a photograph) shows the patient stooping, so that the spinal column, restored to the middle line, may be well seen.

Fig. 1.

Fig. 2

Fig. 3.

Danielsson & Co. lith.

XVII.—*A case of Skoliosis with Excessive Rotation of Vertebræ.* By B. E. Brodhurst. *Exhibited May* 22, 1891.

In June, 1881, I saw, together with Dr. Dabbs, of Shanklin, R. P., æt. 27, who had been suffering considerable pain in the back. This pain was so great that any movements of the trunk were difficult. There was a lumbar curve which involved the whole of the lumbar vertebræ and the lower dorsal; and the compensating curve was formed by the upper and middle dorsal vertebræ. The lumbar vertebræ were so much rotated to the left side that they presented the appearance of a considerable tumour, as is inadequately represented in the accompanying drawing (Plate X, fig. 1). Rotation has been entirely overcome, and the spinal column has resumed its normal position in the median line of the body (figs. 2 and 3), and pain, also, has entirely ceased.

Treatment.—Recumbency was constant during the early months, and during the whole of that period, and until the cure was complete, a spinal support was worn. Movement was almost impossible, except when the support was worn; and indeed it was only when the support was perfectly adjusted that any walking exercise, and that exceedingly limited, and never exceeding ten minutes, could be taken. After five years more freedom of movement was tolerated. But even then walking for more than ten minutes or thereabouts caused a return of lumbar pain. At this time, exercise on a trapèze was attempted, but it had to be discontinued in consequence of the pain which was induced. After a further lapse of time, and when pain in the loin had entirely ceased, suspension on the trapèze was resumed. Pain, more or less, continued until the vertebræ were replaced in their normal positions. It is now two years since this has been accomplished. The spinal support has, notwithstanding, been worn until the present time. Now, however, it will be discontinued, and the patient will resume her active life.

Figs. 2 and 3 (Plate X) show the condition of the patient when exhibited at the meeting of the Society.

XVIII.—*A New Method of Amputation just below the Knee-joint.* By W. Bruce Clarke. *Exhibited May* 22, 1891.

THE stump of the patient, which is here exhibited, illustrates a plan of amputation which has been employed by me in six or seven cases with marked success. It is in reality a

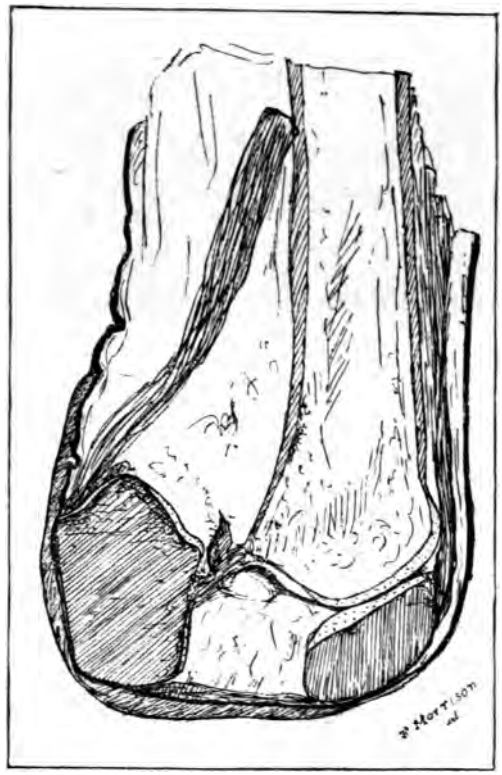


Fig. 19.—Vertical section of stump three months after amputation.

slight modification of Stephen Smith's amputation at the knee-joint, but makes a smaller wound, and avoids the lengthened

period of healing which usually occurs with that method from the long-continued discharge of synovial fluid. It is best performed like Stephen Smith's operation by means of lateral skin flaps, which should start from where the ligamentum patellæ is attached to the lower border of the patella, and terminate at a corresponding point in the popliteal space; the flaps being about 2 or 3 inches in length, though, of course, they are capable of great modification to suit the special peculiarities of any particular case. When the flaps have been dissected up, the tibia is divided at or even above the level of the superior tibio-fibular joint. In other words about half an inch or less of the upper end of the tibia is left attached to the femur. Sometimes the upper end of the fibula is cut through. In this case it is better to remove the small remaining portion of the fibula so as to ensure a better and more shapely stump.

The advantages of this plan of amputation are that a wound is made which is extremely easy to manage at the time of operation, and as the knee-joint is not opened, it heals with great rapidity. The thigh muscles do not waste as the knee-joint remains moveable and keeps them in exercise. The patient readily walks on his patella, thus rendering a less complicated artificial limb necessary than is the case with any other amputation so near the knee. The character of the stump is well shown both by the specimen in the bottle taken from a woman who died of sarcoma of the tonsil about three months after the operation, and also by the cast which was taken from the first case in which I performed the operation, three years after its performance. The anatomical relationship of the parts is clearly seen in the accompanying outline sketch (Fig. 19) of the bottle specimen from the Museum of St. Bartholomew's Hospital.

XIX.—*A case of Hereditary Muscular Spasm.* By Dr. Bolton Tomson (introduced by Dr. Savill). *Exhibited May* 22, 1891.

EDWARD S., æt. 32, has lived a healthy and abstemious life.

Previous history beyond this condition is unimportant.

Present condition.—Has suffered from birth from muscular

spasm. Now confined almost entirely to exposed parts; to end of school life legs also were affected, but never to same extent as hands and face. Mr. S. attributes all he suffers to cold, but two distinct agencies appear to affect him pathologically—(1) cold. (2) Muscular exertion.

The relation of these two factors to each other is as follows:

Cold, if sufficiently intense, *always* affects him and quite independently of muscular exertion. Proof is afforded:

(1). By the attack exhibited before the Society and brought on merely by bathing the hands with iced water. Similar attacks can always be induced in an exactly similar way.

(2). Parts most exposed to air are alone affected.

(3). If one hand is thickly gloved and cold applied to the other, the gloved hand will escape.

Muscular Exertion acts only with the assistance of cold. Proof:

(1). Again, only exposed parts are affected.

(2). In warm summer days or hot rooms, no attack can be produced by this means.

(3). If the parts are cold (and they very easily become so) muscular exertion produces spasm. Any form of cold is injurious—from air, water, wood or metal, but cold air the most so. Any form of muscular exertion may induce spasm, but it has more effect when prolonged than when momentary, and more after a period of rest than after a period of action. Moderate exercise persevered with ceases to induce spasm until after another period of rest.

Description of an attack from cold alone.—The hands are first affected. Power is quickly lost, so that patient cannot dress himself. No tingling. No pain. No anæsthesia during the attack. Skin of hands of a cadavaric coldness. Fingers separated and cannot be adducted. They become semiflexed and return to that position after passing extension or passing flexion. The interossei muscles appear to have lost all power, and *spasm* to occur in the long flexors which feel hard and the tendons of which show prominently. The thumb lies back in the same plane as the palm of the hand. Opposition is only possible by marked flexion of the two end joints of index-finger or not at all, showing a loss of power in the abductor brevis and opponens pollicis. Power is lost from the other thenar muscles and the metacarpo-phalangeal joint is made prominent by the unopposed action of the extensor ossis metacarpi and the primi internodii pollicis. The phalangeal joints are

always abnormally loose, but become almost flail-like during an attack, especially the metacarpo-phalangeal joint of the thumb.

In the face.—The lip muscles are first affected. The labials are imperfectly sounded and mastication becomes difficult. As the action of cold becomes intensified all the facial muscles are involved. This condition passes off with warmth.

Muscular exertion.—The parts being cold, produce spasms. If the hand is tightly clenched a difficulty is experienced in opening it. A slow extension, like an unrolling of the hand, takes place in order from the metacarpo-phalangeal joint to the terminal phalangeal joint, apparently from spasm of the long flexor muscle. The longer the hand is clenched the greater the difficulty in opening it. No pain. No tingling. No anæsthesia.

Face when cold.—A laugh may be fixed for some seconds giving a ludicrous expression. If the eyelids blink they are only raised with difficulty and assume for a few moments a position of partial ptosis.

When the legs were affected the difficulty was to advance them as in walking or more especially in going up stairs. The calf muscles contracted, and the patient was thrown upon the toes.

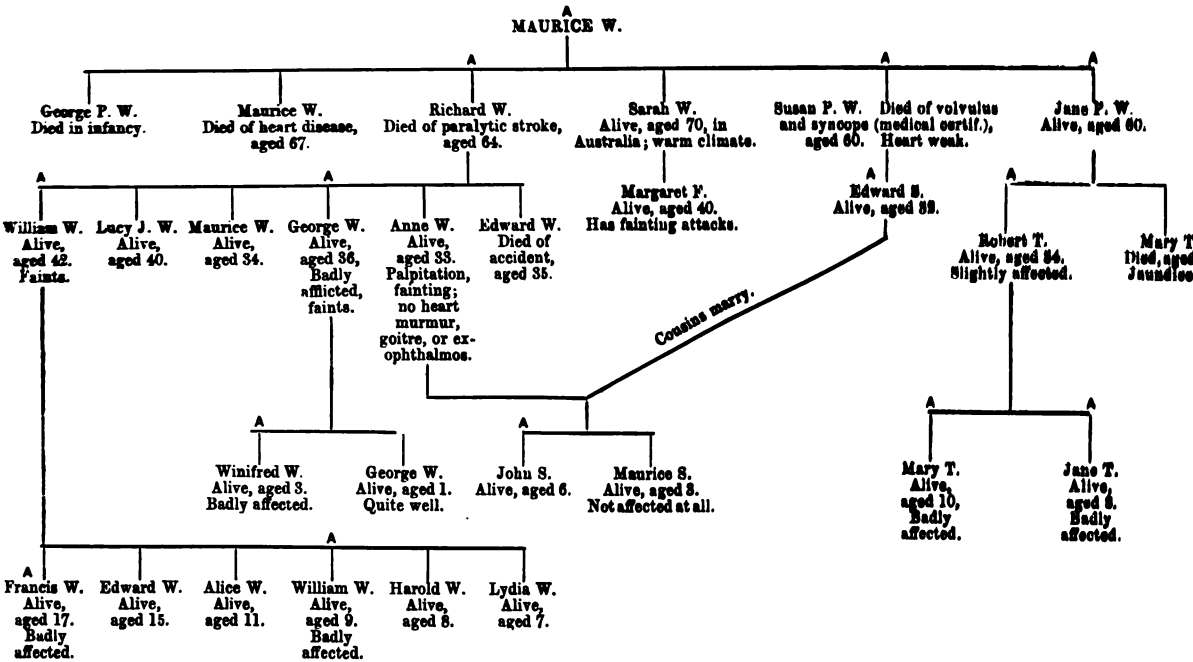
Prolonged muscular exertion may produce a spasm that may persist for twelve to eighteen hours. Such an attack is not relieved by warmth.

Electrical sensibility is diminished in the palmar muscles, and they contract badly alike to the interrupted and constant currents. The muscles of the forearm show some evidence of a reaction of degeneration if they are examined when the arm is normally warm. When affected by cold the results appear to vary. This one would expect since the extreme coldness of the skin during an attack would enormously alter its electrical resistance.

Remarks.—This condition shows some points of resemblance to two diseases—(α) Thomsen's disease: (β) a disease described by Eulenberg in the *Neurologisches Centralblatt*, p. 265, 1886. He observed it in one family alone and gave the name of Congenital Paramyotone. Mentioned by Gowers, *Diseases of Nervous System*, vol. i, p. 416.

Thomsen's disease.—It resembles in that a rigidity of muscles is brought on by muscular exertion, more especially after a period of rest.

Dr. Bolton Tomson's Case of Hereditary Muscular Spasm.



Those marked A are affected.

Jane W., daughter of Maurice W. (primus), writes: "I have never heard of any of Maurice W.'s brothers or sisters, parents or grandparents, being affected. Maurice W. appears undoubtedly to have been the first."

Differs—(1) In that muscular exertion is not the only agent that acts pathologically, and probably it never acts alone.

(2) The disease is principally limited to the hands and face, whereas in Thomsen's disease the muscles of the face are usually unaffected and the legs more affected than the arms.

(3) The hand is permanently weakened. In Thomsen's the muscles are said to be always well nourished, and often to possess more than normal strength.

(4) The affection does not pass off with muscular action.

Paramyotone.—It resembles (1) in the way in which exposed parts alone are affected by cold.

(2). The electrical reaction are lowered to both currents.

Differs—(1) In that cold is not the only agent that acts pathologically.

(2) That although cold may excite spasm and is apparently always necessary to it, yet extreme cold produces loss of power in certain muscles.

Both diseases it resembles in its remarkable hereditary character. One may suggest that it may possibly furnish a connecting link between these two diseases.

Report of the Committee appointed to examine Dr. Tomson's case of peculiar difficulty of movement.

We have carefully examined the patient, and we find that at the time at which we examined him almost the only muscles of the body which showed the difficulty were the flexors and extensors of both hands. The difficulty consisted in that when he had closed the hands by the action of the flexors he was unable to open them again for several minutes, the two middle fingers always being the last to become extended. This inability to open the hand did not appear to be due to the spasmodic contraction of the flexors which was very slightly marked, for anyone could by slight passive extension easily straighten the fingers, and indeed the patient could greatly accelerate their extension by so altering the position of his hand that they tended to fall into the extended position, especially if at the same time he shook the whole upper extremity, so as to shake the fingers into position. Thus it appeared that his chief difficulty was in the temporary weakness of the extensors. The condition here described is greatly increased in cold weather, or if the patient immerses his hands in cold water, and it does not pass off after repeated flexions and extensions, but, on the contrary, becomes much more marked

The electrical reactions were normal. We are of opinion that these points are sufficient to prove that the case is not one of "Thomsen's Disease," but we are unable to give a name to the condition.

The bulk and strength of the muscles were unimpaired, and no contractions could be produced by striking them. The difficulty of movement was not altered by repeated faradisation, or galvanisation of the affected parts. There was no error of sensation.

WILLIAM M. ORD.
W. B. HADDEN.
W. HALE WHITE.
THOMAS SAVILL.

Note by Dr. Savill.—An examination of muscle-fibres taken from the flexor profundus digitorum (at its origin) and the extensor communis digitorum revealed no notable enlargement.

DESCRIPTION OF PLATE XI.

To illustrate Dr. Tomson's case of Hereditary Muscular Spasm.

These photographs were taken when the hands were affected by cold air. They were taken quickly one after another. The positions were chosen by Mr. S. himself, but illustrate well the unvarying position and condition of the hand during an attack from cold. In this instance the seizure was a comparatively mild one, and some power of adducting the thumb remained.

FIG. 1.—The fingers are seen to be semiflexed, principally at the metacarpo-phalangeal and phalangeal joints. The thumb is strongly abducted. The projection of the metacarpo-phalangeal joint anteriorly is seen in this and in all the photographs.

FIG. 2.—Full palmar aspect shown. The fingers are seen to be separated from each other. Patient cannot adduct them.

FIG. 3.—By supinating the hand the more extreme flexion of the two middle fingers is better shown.

FIG. 4.—Patient is attempting to oppose the thumb and index finger. This he can only do by a considerable flexion of the last two end joints of the index finger. The pressure, he says, would not equal ¼ oz. (patient has a knowledge of engineering). During an attack the skin looks shrivelled. This is particularly well seen in Figs. 3 and 4.

FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

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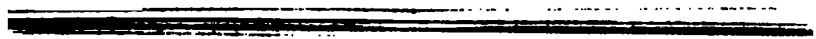

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